Service Manual

TOP NEXT

ORDER NO. MD0106137C2

DVD Home Theatre Sound System

- SA-HT70

Colour

(S)... Silver Type

Area

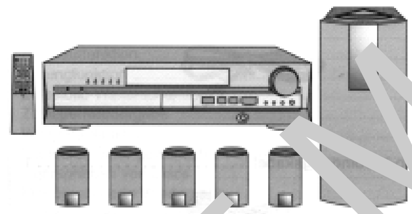
(E)... Continental Europe

(EB)... Great Britain

(EG)... Germany and Italy

MECHANISM :

RAE1805Z-S TRAVERSE UNIT



Specifications

AMPLIFIER SECTION	
RMS TTL Power Output	300 W
(10% total harmonic distortion)	
Front (1 kHz)	36 W per channel (6Ω)
Center (1 kHz)	36 W (6Ω)
Surround (1 kHz)	36 W per channel (6Ω)
Subwoofer (80 Hz)	120 W (6Ω)
DIN TTL Power Output	220 W
(1.0% total harmonic distortion)	
Front (1 kHz)	26 W per channel (6Ω)
Center (1 kHz)	26 W (6Ω)
Surround (1 kHz)	26 W per channel (6Ω)
Subwoofer (80 Hz)	90 W (6Ω)
Input sensitivity/ input impedance	
AUX	250 mV, 10 kΩ
DISC SECTION	
Disc	
DVD	8 cm/ 12 cm Single-Sided, SingleLayer
	8 cm/ 12 cm Single-Sided, Double-Layer
	8 cm/ 12 cm Double-Sided, Double- Layer
	(One layer per side)
CD/ VCD	8 cm/ 12 cm (CD-R/ RW)
Video	
Signal system	NTSC/ PAL (depending on disc format)
Output level	Composite video 1 Vp-p (75Ω)
S-video Y	1 Vp-p (75Ω)
S-video C	0.300 Vp-p (75Ω / PAL)
	0.286 Vp-p (75Ω / NTSC)
Audio	
Sampling frequency	
CD	44.1 kHz
DVD	48 kHz/ 96 kHz
Decoding	16/ 20/ 24 bit linear
Wow and flutter	Below measurable limit
D/ A converter	Delta-sigma DAC
Pick up	
Beam Source	Semiconductor Laser
Wavelength	
DVD	658 nm

8 Self-Diagnostic Function

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Carry out the following procedure after repair works to ensure effee self diagnosis and tilt adjustment. When using the self diagnosis function, confirm that “NO DISC” is being displayed on the display panel and alsothe optical pickup has not been replaced yet. Carry out the self diagnosis in accordance to the guideline and replace the optical pickup when the current value of the laser drive is above 50.

[NOTE] Measure the value once the POWER button is depressed and power is connected before the equipment warm up (within 3 minutes).

- Carry out the following self diagnosis when “NO DISC” is being displayed on the display panel, the equipment does not read the disc or before the replacement of optical pickup.

1. When “NO DISC” is being displayed on the display panel, equipment does not function smoothly, etc.
2. Check the current value of the laser drive. With no disc in the drive, press the “Screen Display” button on the remote control while pressing the STOP button on the equipment.
3. Implement step 4 if the value is below 50. Replace the optical pickup when the value is above 50. After replacement, implement step 2 again and if the value of the optical pickup is above 40, replace the optical pickup again. There is a possiblityof electrostatic failure during replacement.
4. Carry out tilt adjustment of the optical pickup if the value of the optical pickup before replacement is below 50 or the value of the replaced optical pickup is below 40.
5. Carry out initial setting. Press the “> 10” button on the remote control while pressing the STOP button on the equipment. With this, the whole procedure is completed.

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10.1 Mode List

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Use this function when performing maintenance on the unit.

Main unit button	Remote control button	Usage
TUNE MODE	0	UHF display
	5	Positioning adjustment
	6	Confirmation of area code, transmission method
	7	Confirmation of internal program version
	9	Total illumination of main unit display panel
	Screen Display	Confirmation of laser drive current
	Pause	Saving of laser drive current value after optical pickup replacement (Do not perform this operation other than for replacement of optical pickup)
	>10	Initialisation of main unit (Return to factory shipment settings) Carry out for replacement of micro computer, peripheral parts of micro computer or printed board.

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10.2 DVD Self Diagnostic Function - Error Code

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Error Code	Error Content	Additional error explanation	Defect 1	Defect 2	Defect 3	Defect 4
	U, H error					
U11	Focus error					
H01	Tray loading error					
H02	Spindle servo error	(Spindle servo, DSC SP motor, CLV servo error)				
H03	Traverse servo error					
H04	Tracking servo error					
H05	Seek error					
H06	Power error	Cannot switch off the power because of the panel and system computer communication error				
	DSC related					
F500	DSC error	DSC stops in the occurence of servo error (starup, focus error, etc)	OPU	ADSC	FEP	servo drive
F501	DSC not Ready	DSC-system computer communication error (Communication failure caused by idling of DSC)	ADSC	CPU		
F502	DSC Time out error	Similar disposal as F500	OPU	ADSC	FEP	servo drive
F503	DSC communication Failure	Communication error (result error occured although communication command was sent)	ADSC	FEP	EEPROM	
F505	DSC Attention error	Similar disposal as F500	OPU	ADSC	FEP	servo drive
F506	Invalid media	Disc is flipped over, TOC unreadable, incompatible disc	DISC	FEP	ADSC	ODC
	ODC related					
F600	Access failure to management information caused by demodulation error	Operation stopped because navigation data is not accessible caused by the demodulation defect	ODC	FEP	ADSC	
F601	Indeterminate sector ID requested	Operation stopped caused by the request to access abnormal ID data	ODC	FEP	ADSC	
F602	Access failure to LEAD-IN caused by demodulation error	LEAD IN data unreadable				
F603	Access failure to KEYDET caused by demodulation error	Access failure to CSS data of disc				
F610	ODC abnormality	No permission for command execution	ODC			
F611	6626 QCODE don’t read Error	Access failure to seek address in CD series	ODC			
F612	No CRC OK for a specific time	Access failure to ID data in DVD series	ODC			
F630	No reply to KEY DET enquiry	(for internal use only)				
F631	CPPM KEY DET is not available till the FILE terminal	(CPPM file system is unreadable caused by scratches)	DISC	CPPM		
F632	CPPM KEY DET is not available	Been revoked or falsified	DISC	EEPROM	CPPM	
	Disc code					
F103	Illegal highlight Position	Big possibility of disc specification violation during highlight display	DISC			
	HIC Error					
F4FF	Force initialize failure (time out)		EEPROM	CPU	FEP	ADSC
	Micro computer error					
F700	MBX overflow	When replying message to disc manager				
F701	Message command does not end	Next message is sent before replying to disc				

		manager				
F702	Message command changes	Message is changed before it is sent as a reply to disc manager				
F880	Task number is not appropriate	message coming from a non-existing task				
F890	Sending message when message is being sent to AV task	Sending message to AV task				
F891	Message couldn't be sent to AV task	Begin sending message to AV task				
F893	FROM falsification		FROM	CPU		
F894	EEPROM abnormality		EEPROM	Serial communication on lone		
F8A0	Message command is not appropriate	Begin sending message to AV task				

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10.3 Last Error Code saved during NO PLAY

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Error code	Error Content	System computer	Setting task	System computer internal error code
F0BF	6) Cannot playback because physical layer is not recoginizable	PCND_NOPLAY PHYSICAL 0x50	DriveManager	0xDOBF
F0C0	8) DVD: Cannot playback because it is not DVD Video/Adio/VR	PCND_NOPLAY VIDEO 0x70	DiscManager	0xDOCO
F0C1	9) DVD: Prohibited by the restricted region code	PCND_NOPLAY RCD 0x80	DiscManager	0xDOC1
F0C2	A) DVD: PAL restricted playback	PCND_NOPLAY PAL 0x90	DiscManager	0xDOC2
F0C3	B) DVD: Parental lock setting prohibits the playback of the entire title	PCND_NOPLAY PTL 0xA0	DiscManager	0xDOC3
F0C4	C) VCD: Prohibited because it is in PHOTO CD format	PCND_NOPLAY PHOTO CD 0xB0	DiscManager	0xDOC4
F0C5	VCD/CD: Prohibited bacause it is CDROM without CD-DA	PCND_NOPLAY CDROM 0xC0	DiscManager	0xDOC5

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10.4.1 Recovery after the DVD player is repaired

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When an FROM or an EEPROM in and on the module P.C.B. has replaced, carry out the recovery disc processing to optimize the drive.

Playback the disc above to process the recovery automatically.

Recovery disc (Product number: RFKZD5TR001 [SPC supply])

FROM disc (Product number: RFKFRV45C040 [SPC supply])

Note:

This unit requires no initialization process carried out after the traditional DVD players were repaired. When the recovery measures are taken, the customer setting will return to the factory setting as same as the procedure described in item of “Initialization” in10.1 is carried out. Write down the contents of the setting before recovery processing, and reset the player.

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10.5 Retail shop lock function

In order ro prevent damage to disc during display at retail shop, etc., this function disables “Retrieval of disc”.

“LOCKED” is displayed when the operation is selected and the operation would not function.

There are 2 types of lock function on this equipment, i.e., Lock Mode A and Lock Mode B.

10.5.1 Setting Method

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Lock Mode A

With the power turned to On, set the SELECTOR to “DVD/CD”. The lock function works by presing the “POWER” button on either the main unit or the remote control while continously pressing on the”TuneMODE” button on the main unit. (When the locked condition is working, “LOCKED” will appear on the display for 3 seconds before commencement of disc playback.)

Lock Mode B

With the power turned to ON, set the SELECTOR to DVD/CD. The lock function works by pressing the “POWER” button on either the main unit or the remote control while continously pressing on the “/MEMORY” buttonon the main unit. (When the locked condition is working, “LOCKED” will appear on the display for 3 seconds before commencement of disc playback.)

When in Lock Mode B, only the sound quality operating buttons will work while the rest of the buttons will not work.

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10.5.2 Removal method

TOP PREVIOUS NEXT

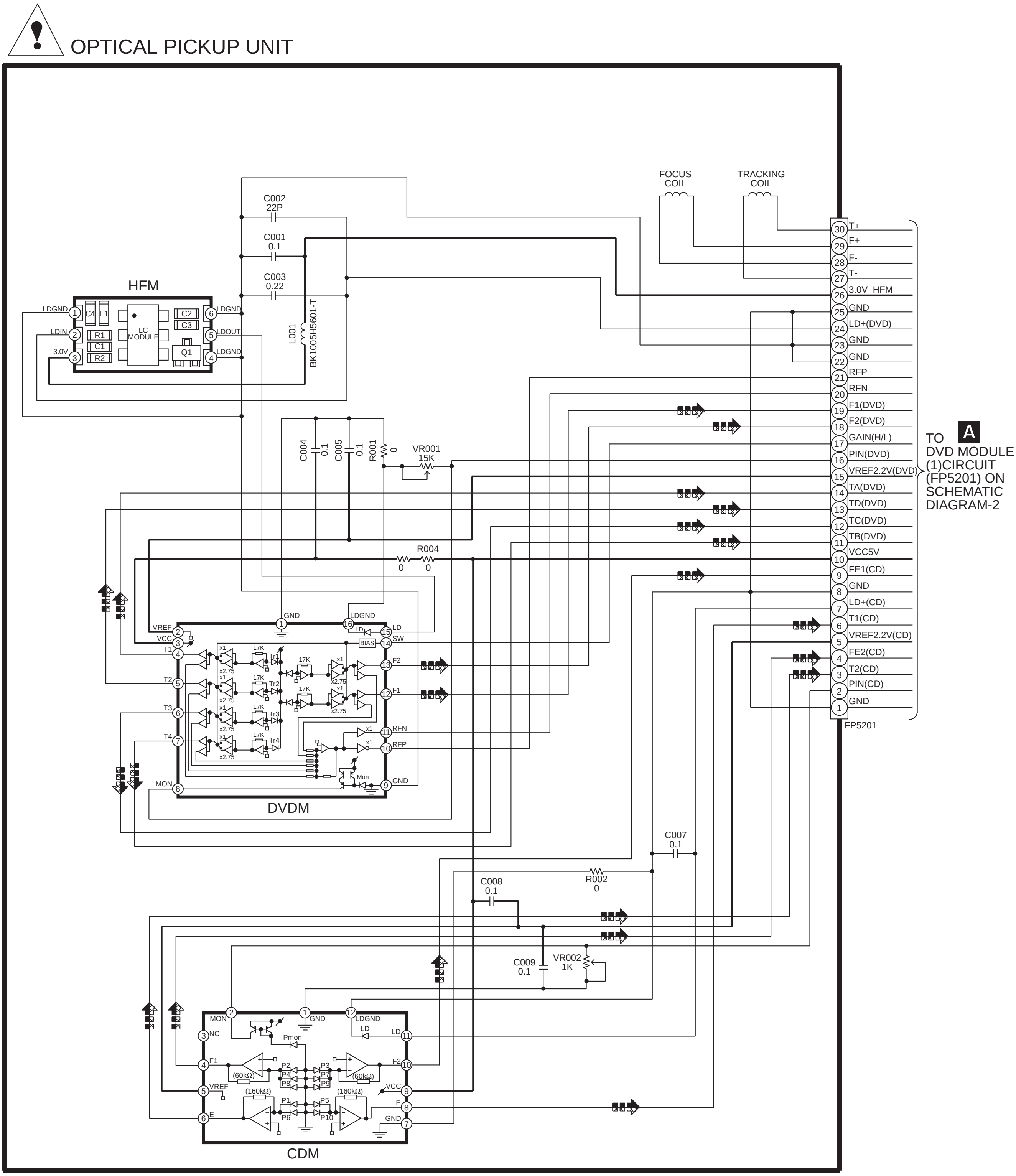
Both Lock Mode A and B can be disabled by repeatling the setting methods. Furthermore, the lock functions can also be disabled by unplugging the power cord from the equipment. (“UNLOCKED” will appear on the display for 3 secondswhen the lock function is disabled.)

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SCHEMATIC DIAGRAM - 1

: +B SIGNAL LINE : DVD (AUDIO/VIDEO) SIGNAL LINE

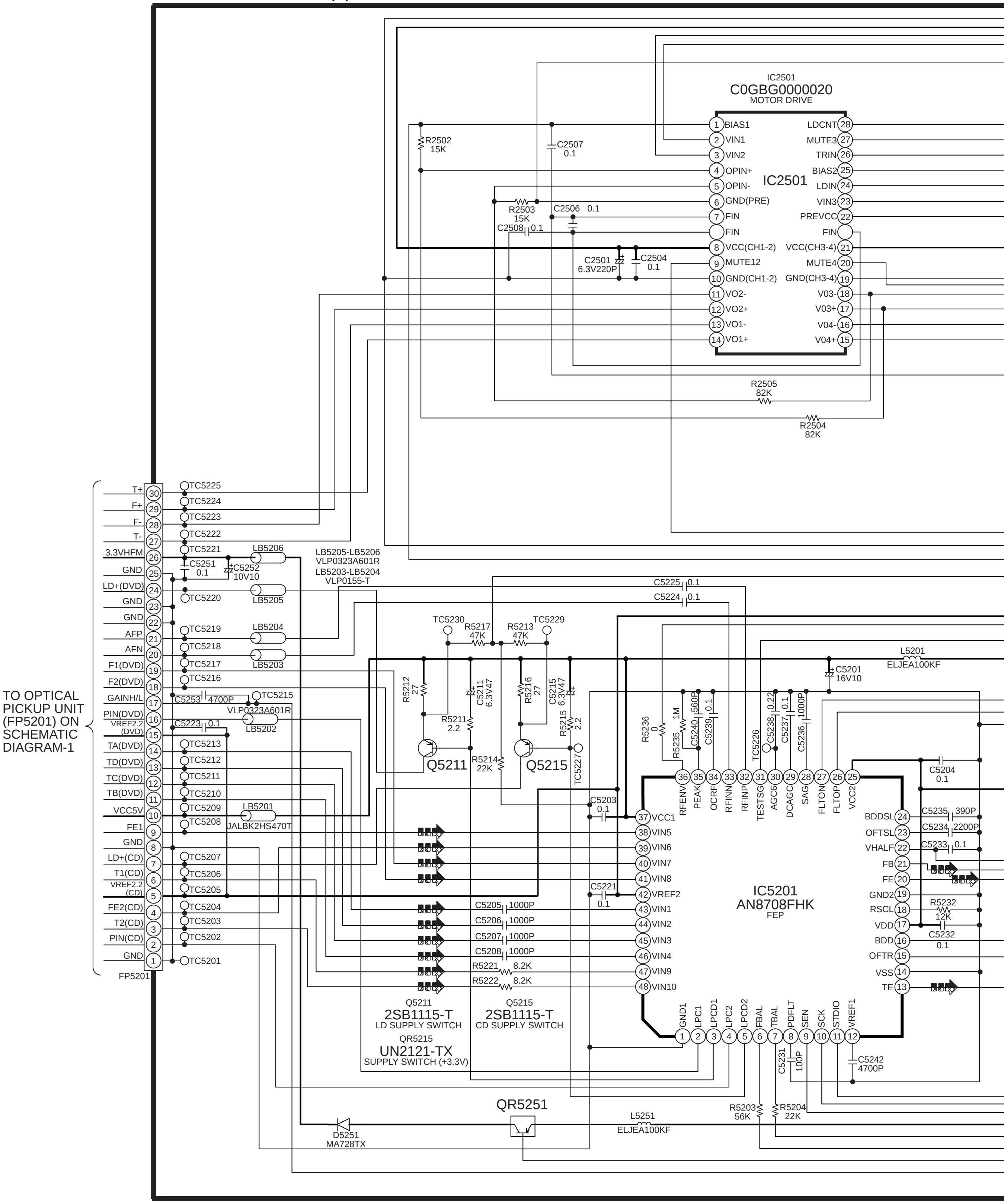
OPTICAL PICKUP UNIT



SCHEMATIC DIAGRAM - 2

A DVD MODULE(1) CIRCUIT

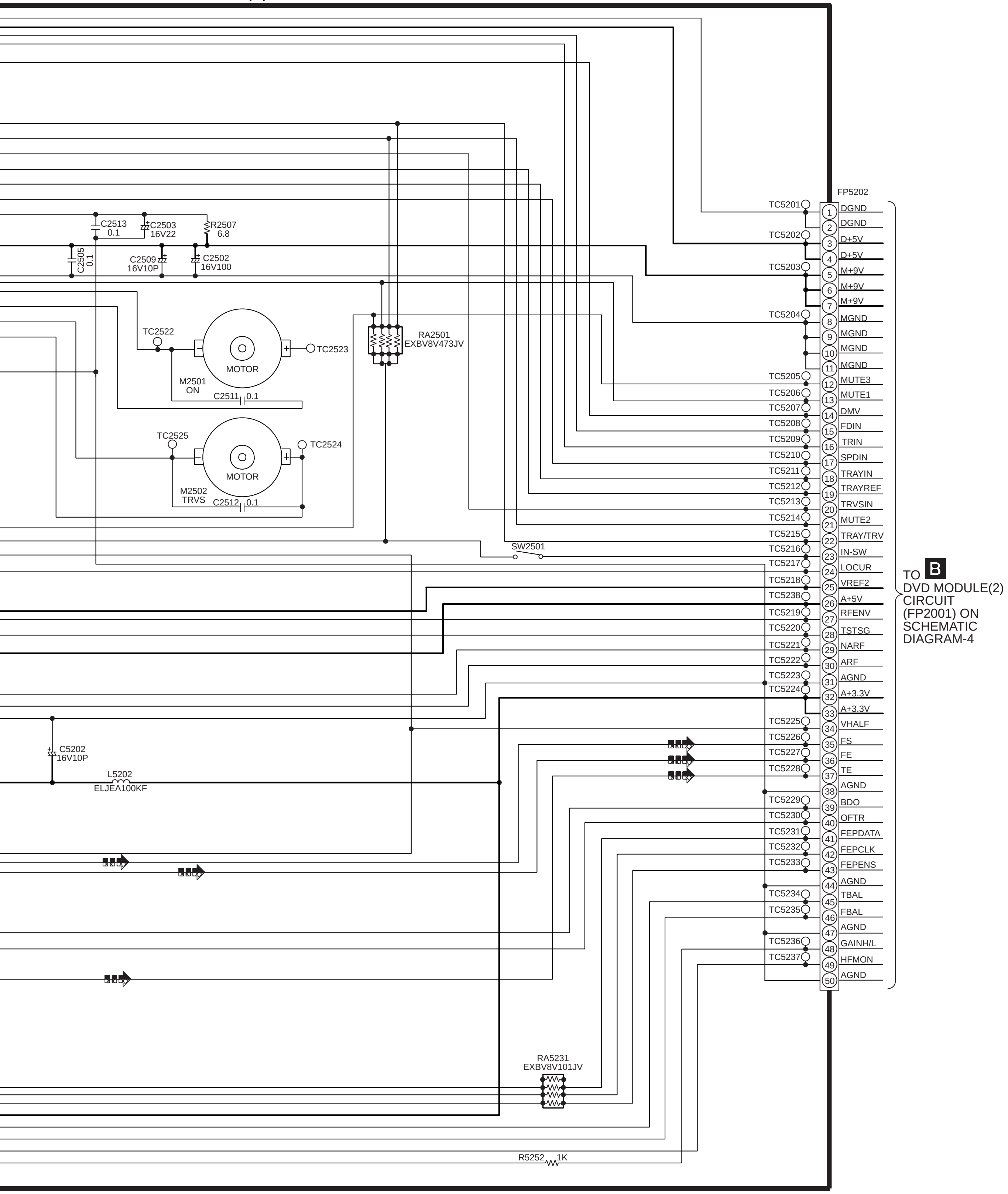
——— : +B SIGNAL LINE   : DVD (AUDIO/VIDEO) SIGNAL LINE



SCHEMATIC DIAGRAM - 3

: +B SIGNAL LINE : DVD (AUDIO/VIDEO) SIGNAL LINE

A DVD MODULE(1) CIRCUIT

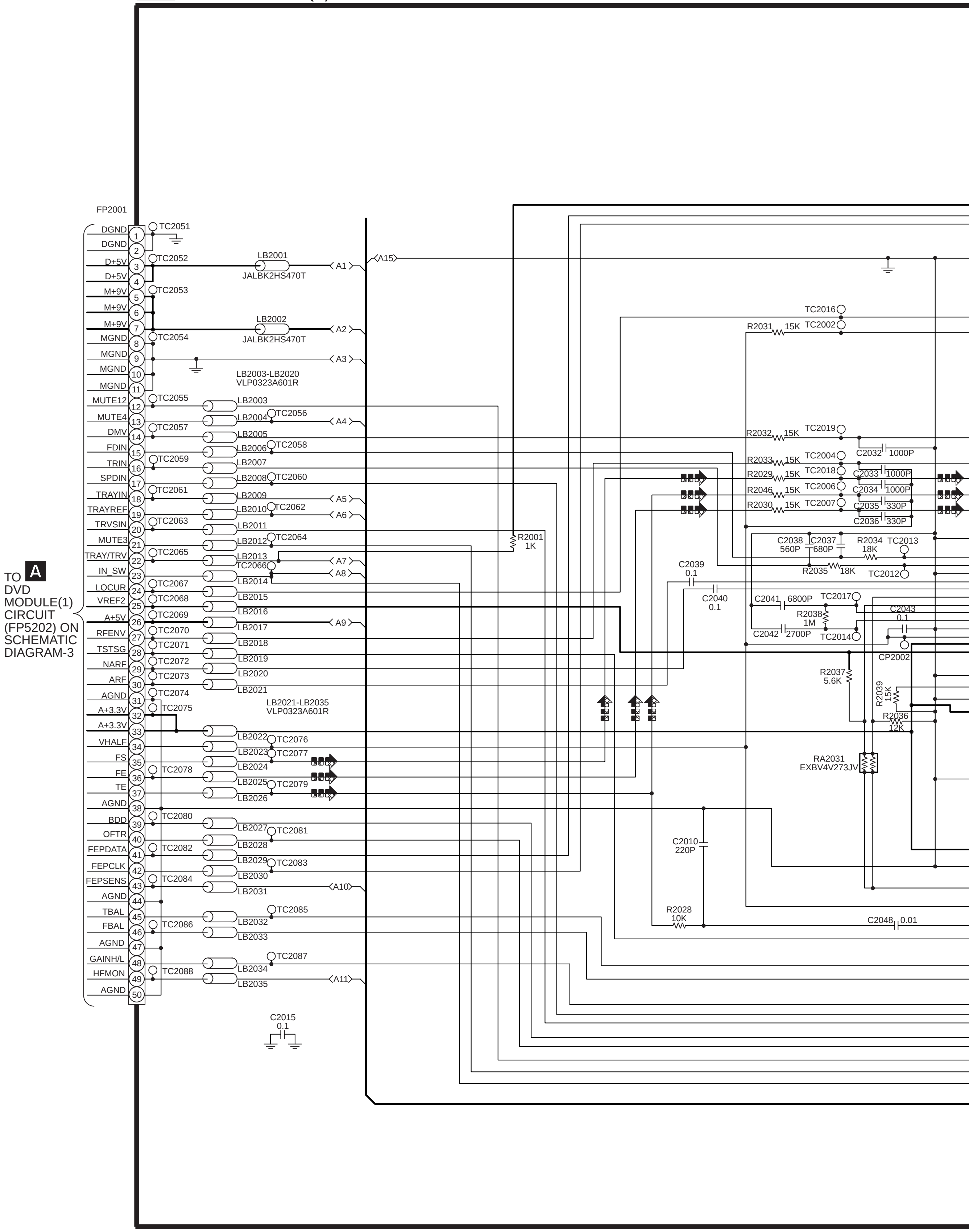


SCHEMATIC DIAGRAM - 4

B DVD MODULE(2) CIRCUIT

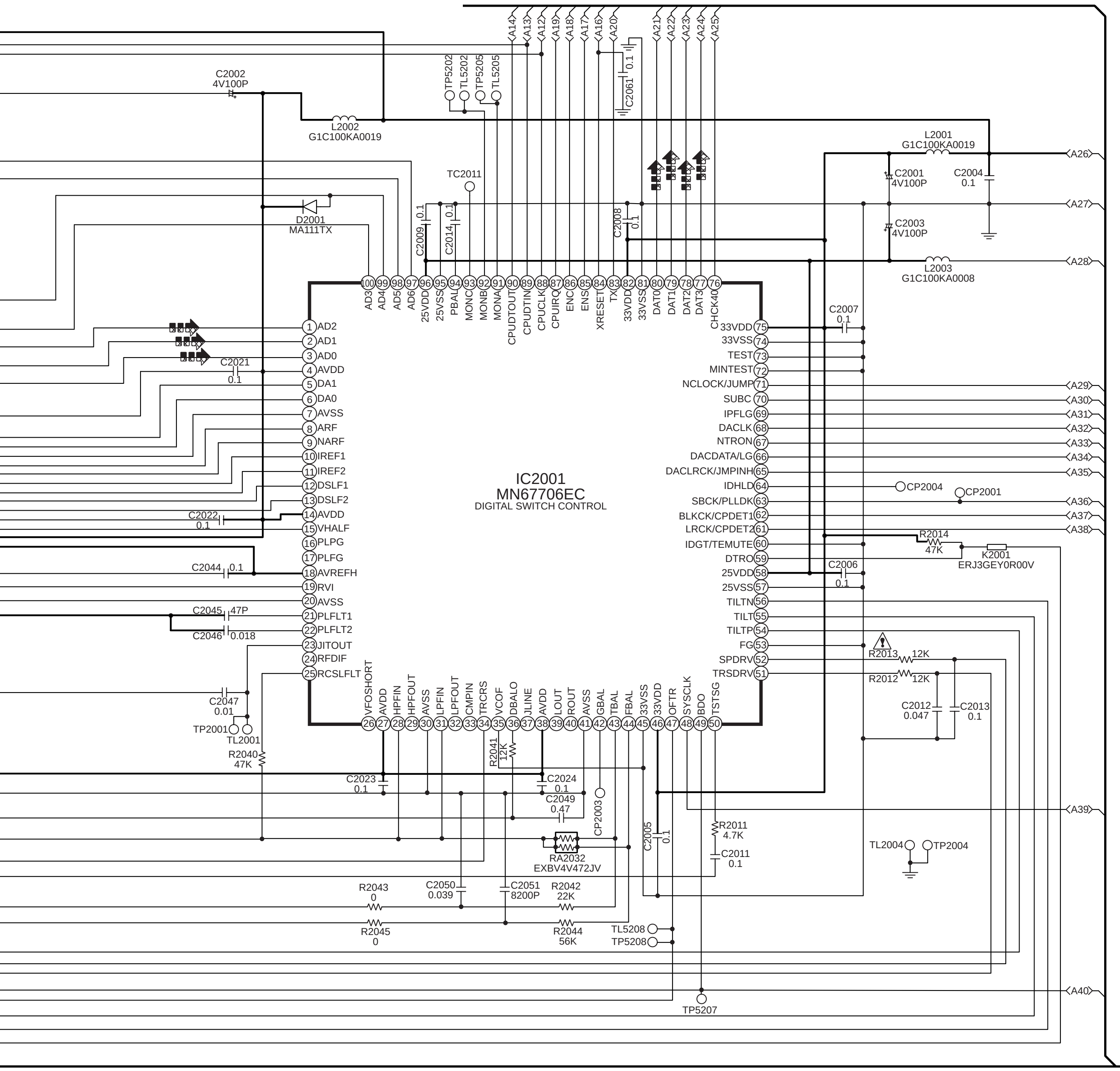
: +B SIGNAL LINE

: DVD (AUDIO/VIDEO) SIGNAL LINE



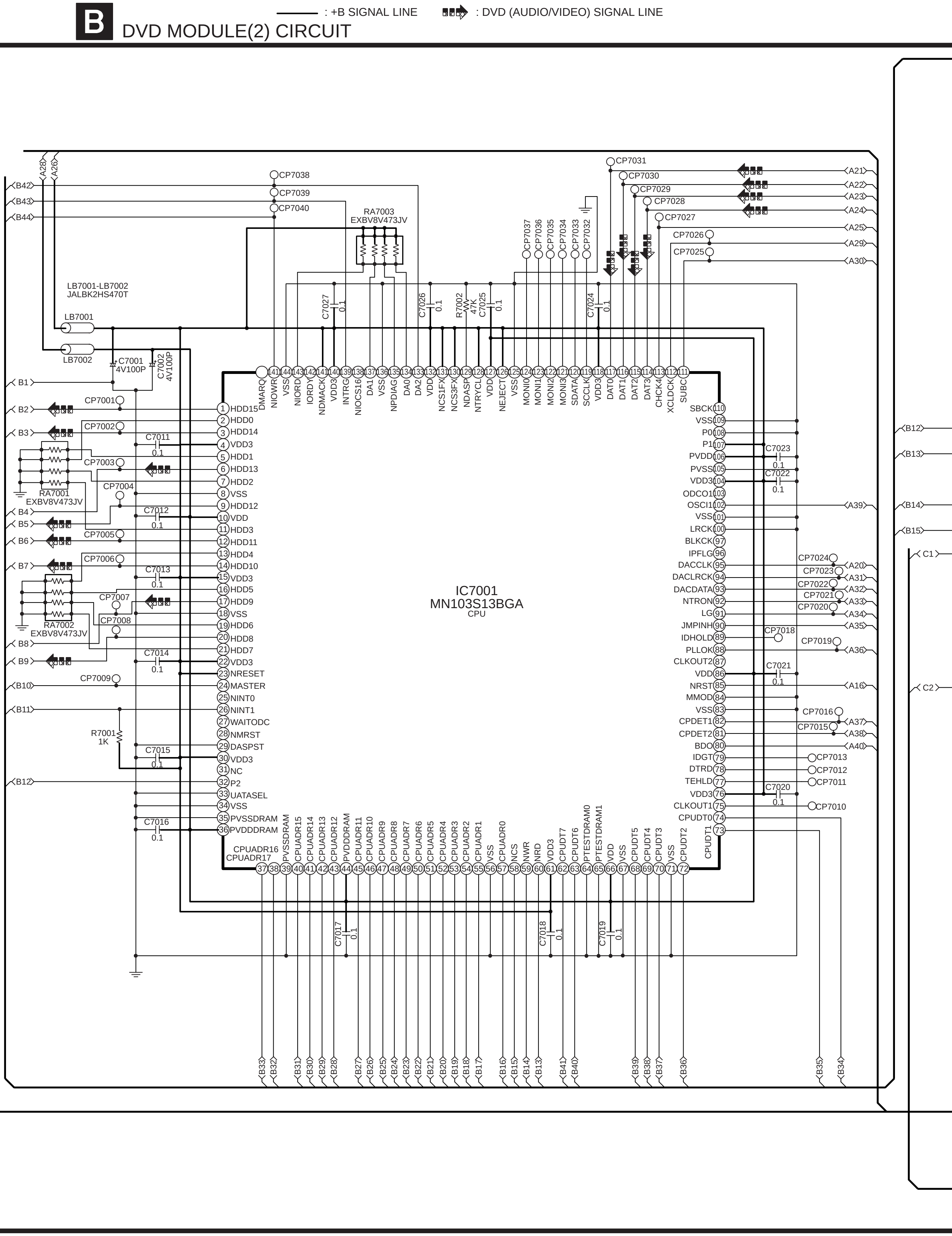
B DVD MODULE(2) CIRCUIT

: +B SIGNAL LINE : DVD (AUDIO/VIDEO) SIGNAL LINE



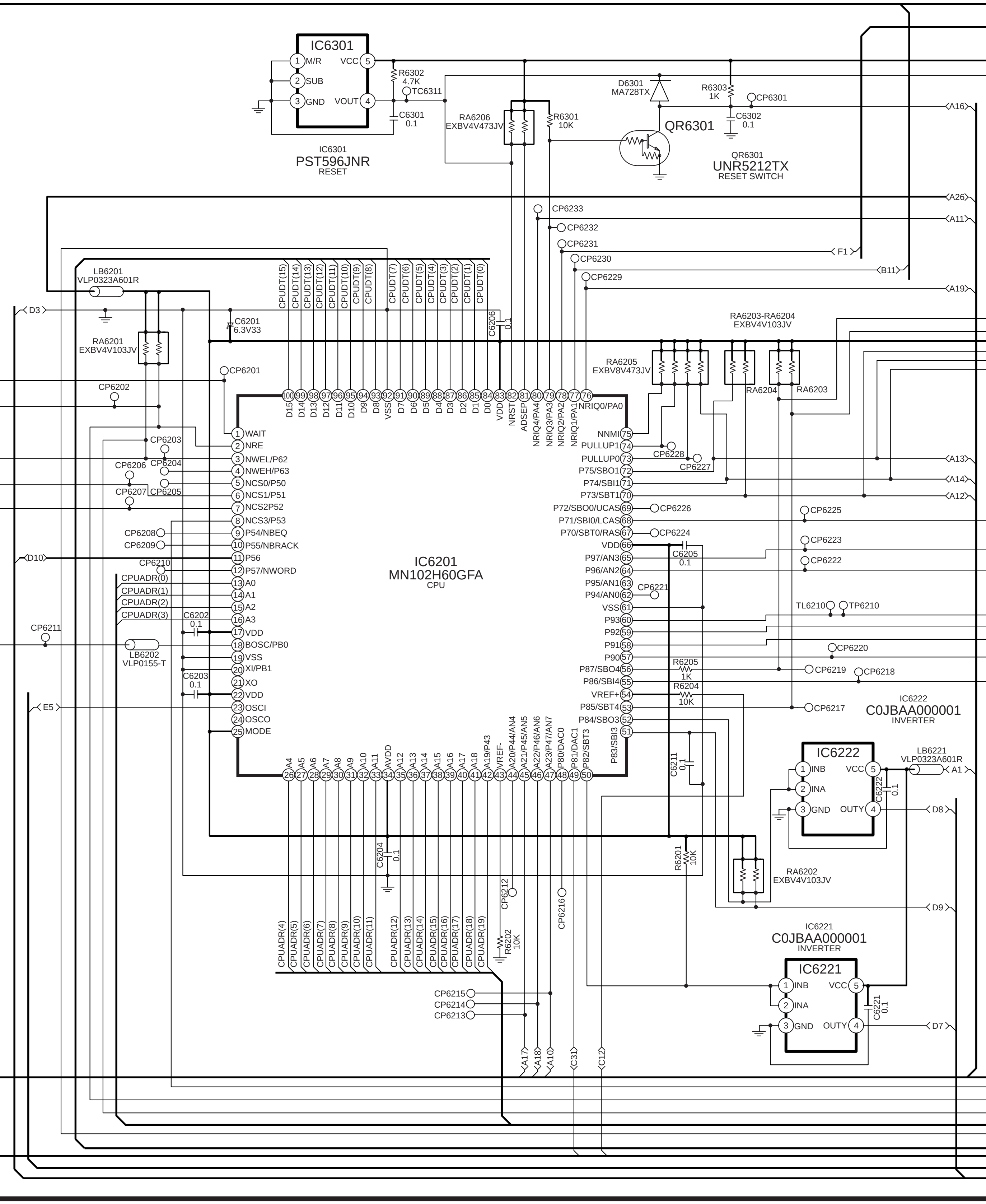
SCHEMATIC DIAGRAM - 6

B DVD MODULE(2) CIRCUIT



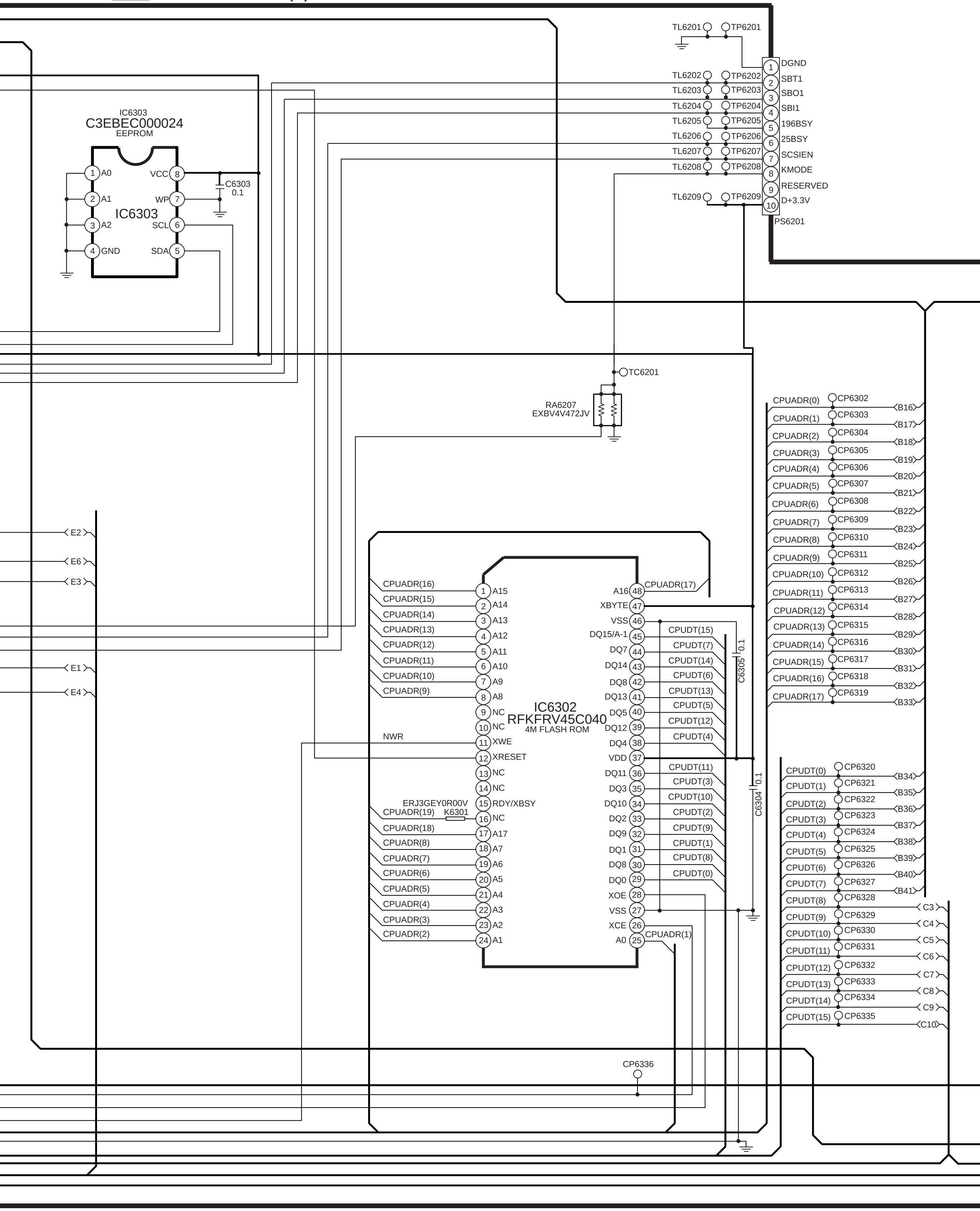
B DVD MODULE(2) CIRCUIT

: +B SIGNAL LINE



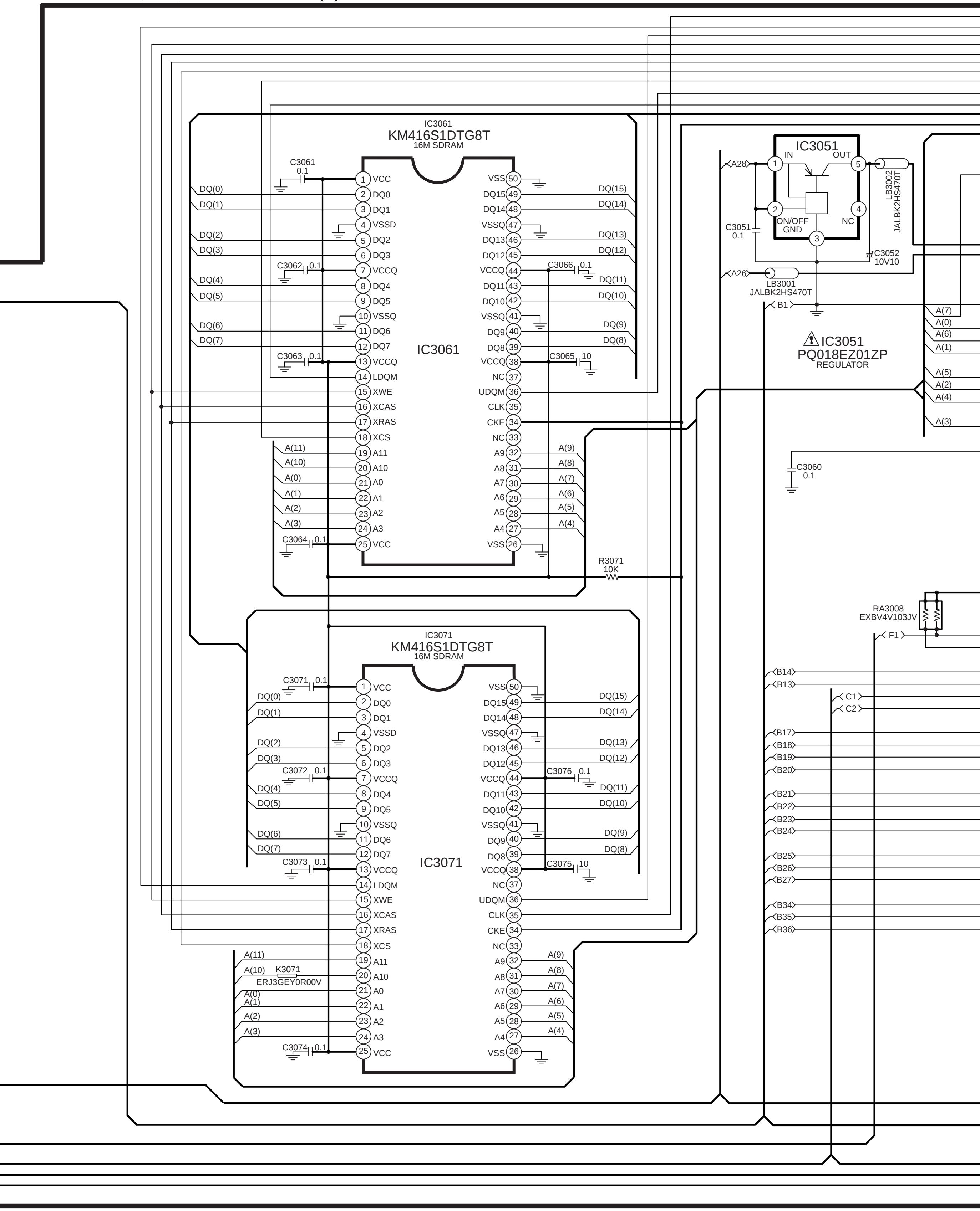
B DVD MODULE(2) CIRCUIT

: +B SIGNAL LINE



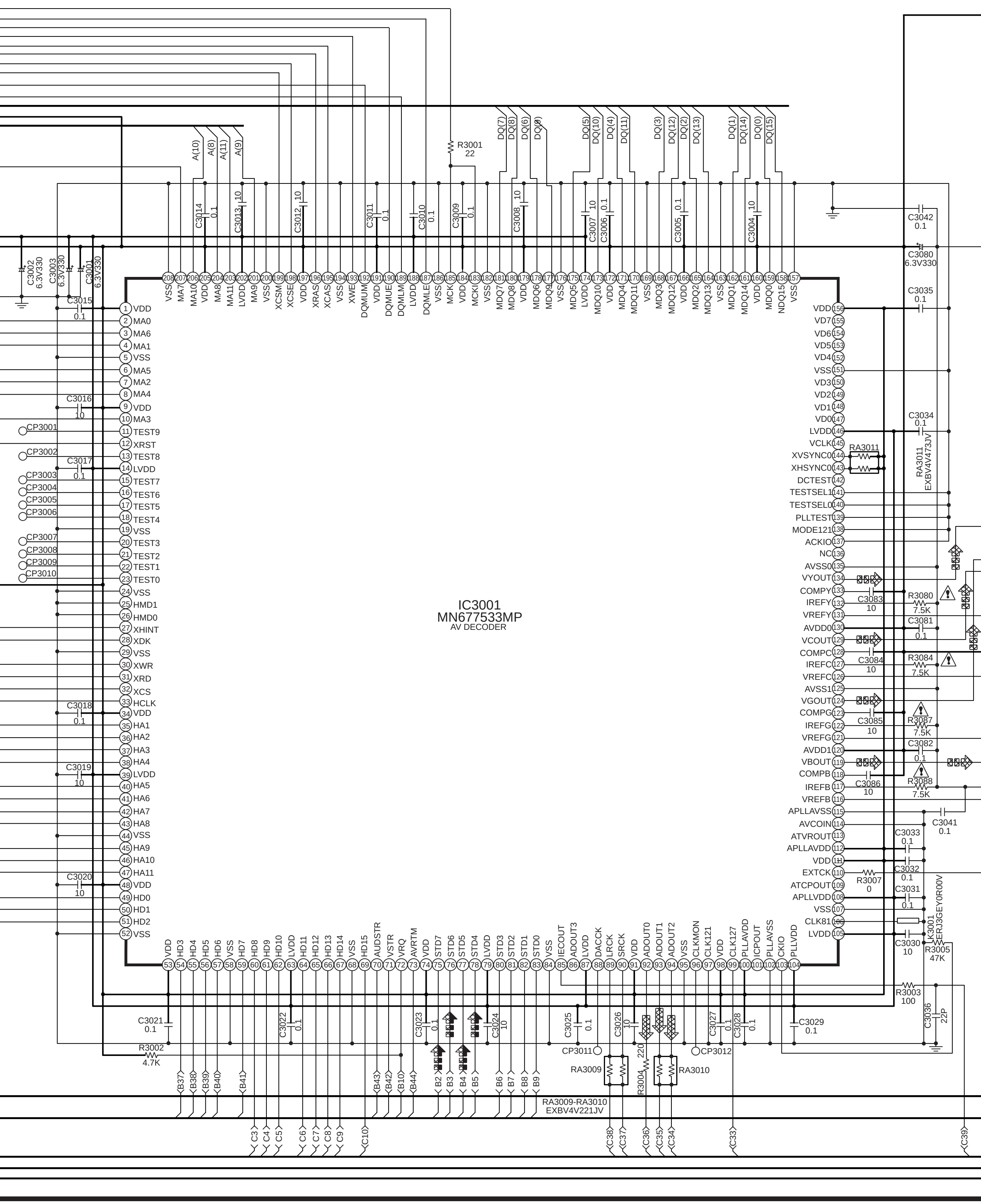
B DVD MODULE(2) CIRCUIT

: +B SIGNAL LINE



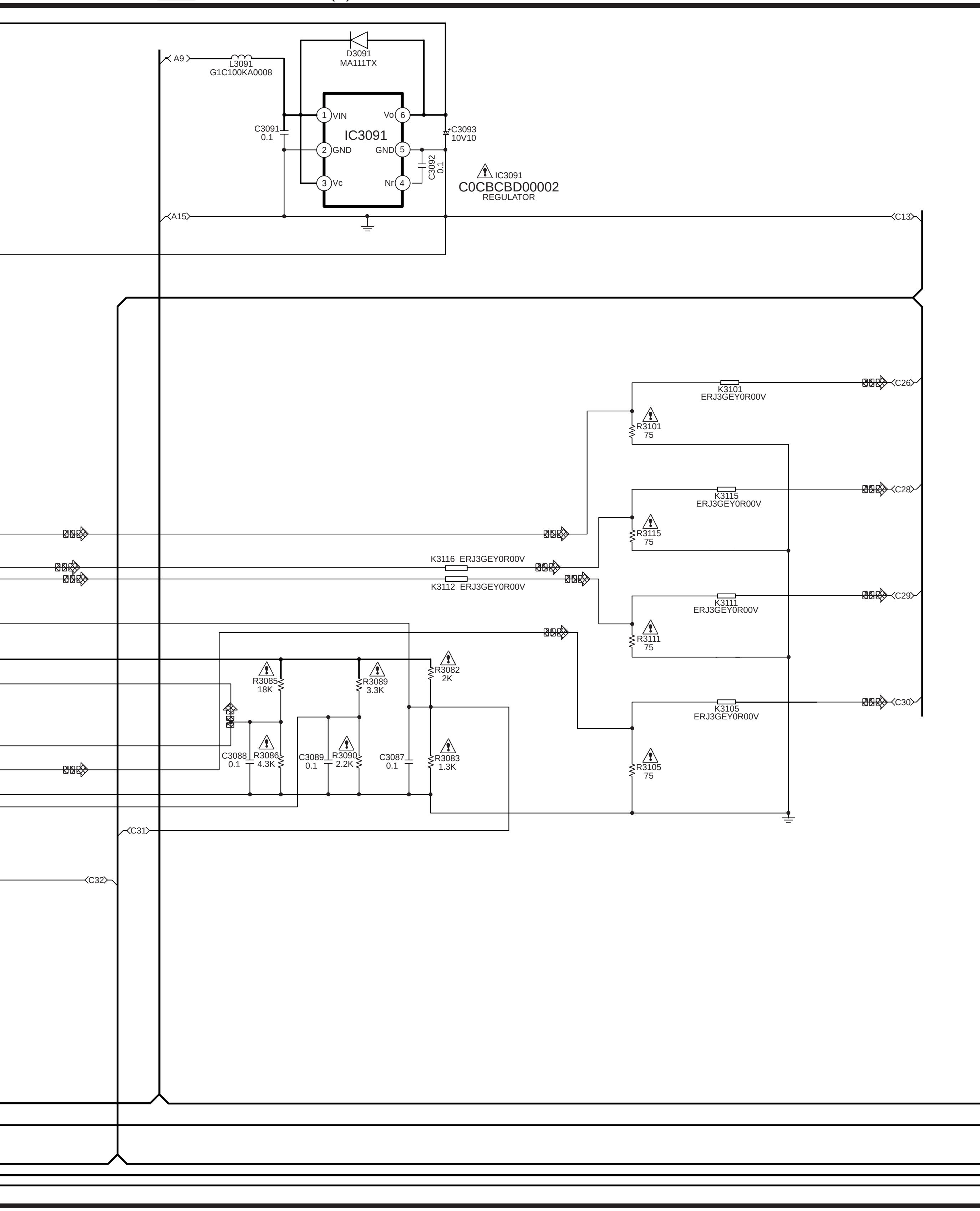
B DVD MODULE(2) CIRCUIT

- : +B SIGNAL LINE
- : DVD (AUDIO/VIDEO) SIGNAL LINE
- : CD/DVD (AUDIO) SIGNAL LINE
- : DVD (VIDEO) SIGNAL LINE



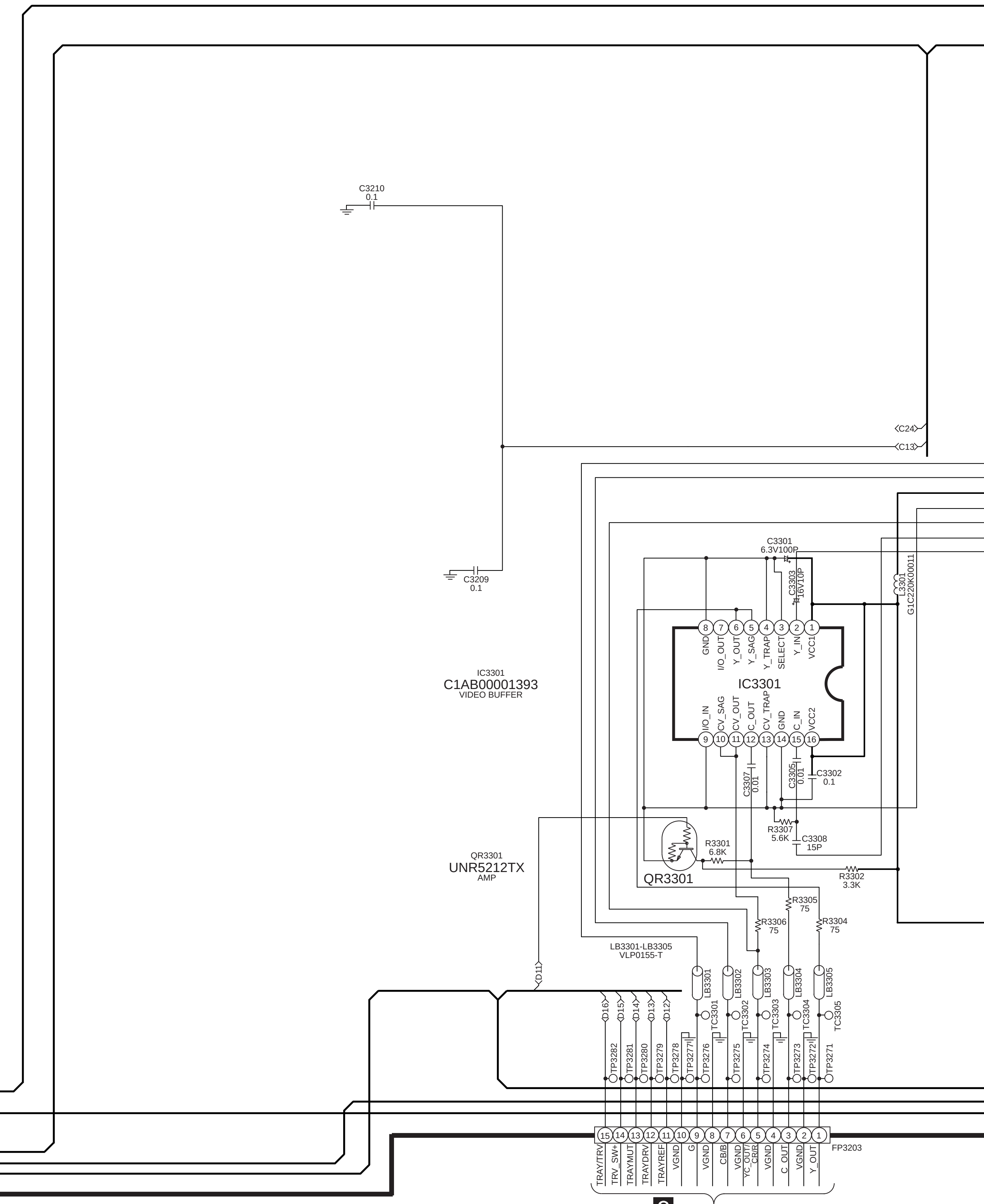
B DVD MODULE(2) CIRCUIT

: +B SIGNAL LINE
: DVD (VIDEO) SIGNAL LINE



B DVD MODULE(2) CIRCUIT

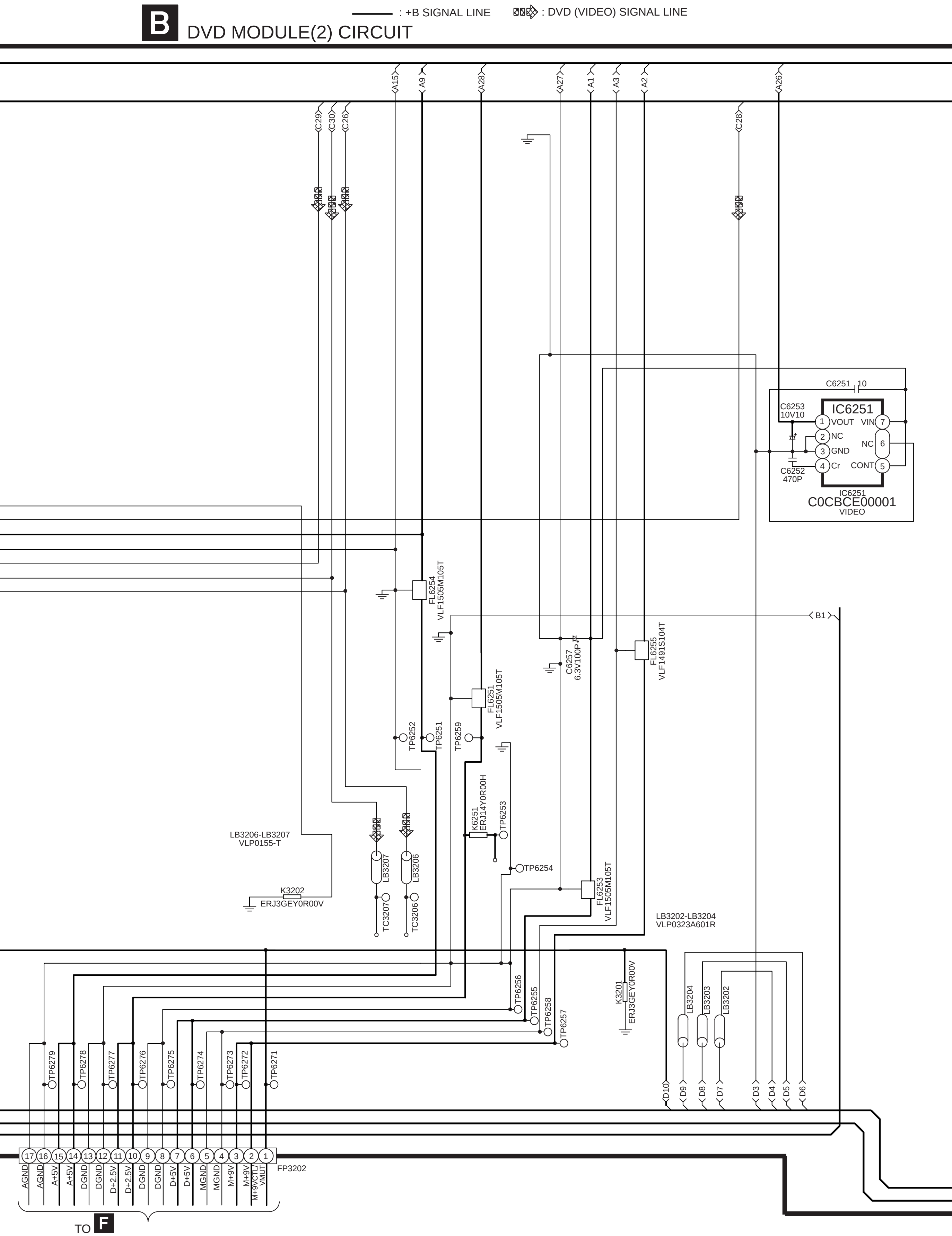
: +B SIGNAL LINE



TO C
INPUT CIRCUIT (CN101) ON
SCHEMATIC DIAGRAM-16

SCHEMATIC DIAGRAM - 13

B DVD MODULE(2) CIRCUIT



TO F
DVDREG CIRCUIT (CP6251)
ON SCHEMATIC DIAGRAM-21

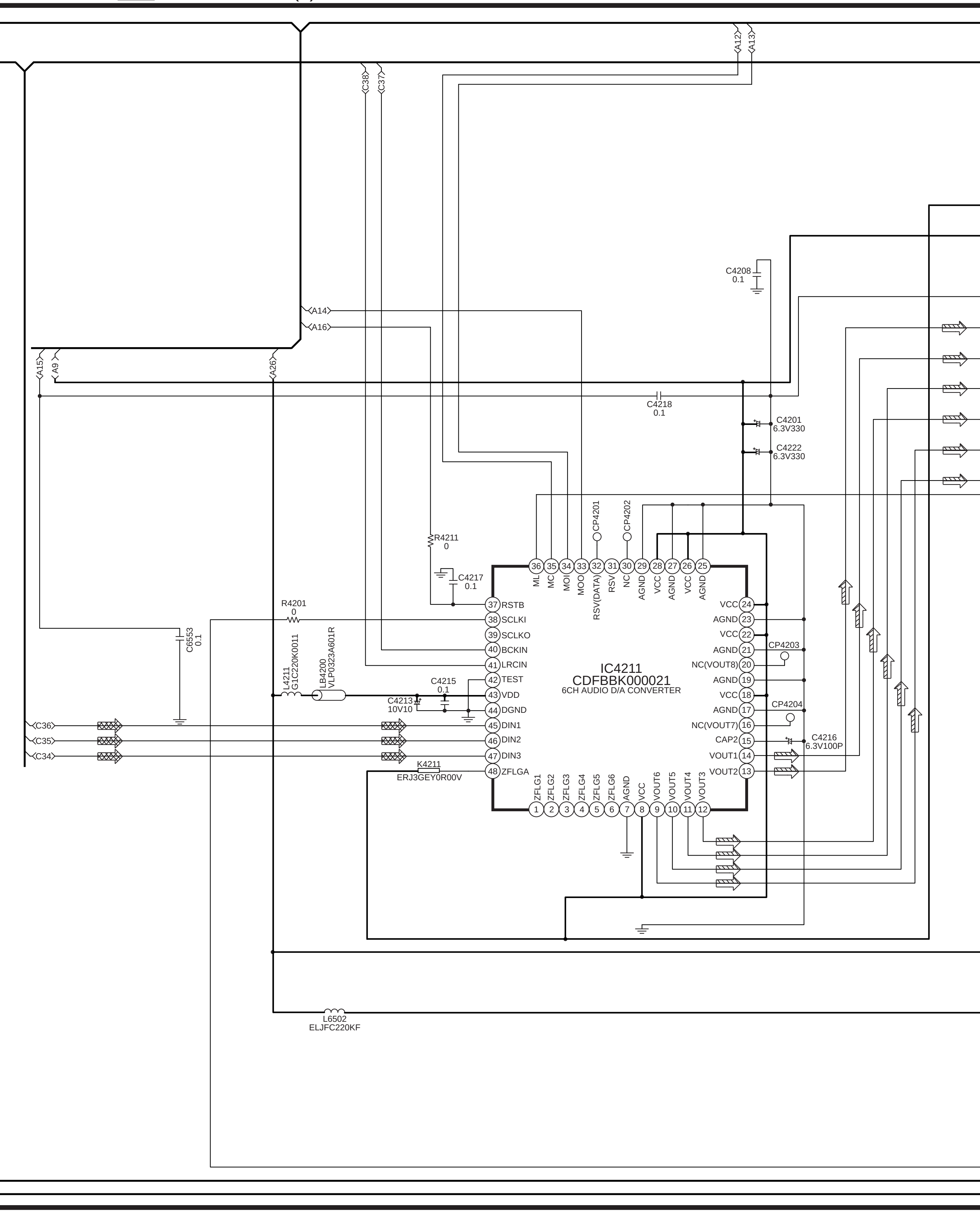
SCHEMATIC DIAGRAM - 14

B DVD MODULE(2) CIRCUIT

: +B SIGNAL LINE

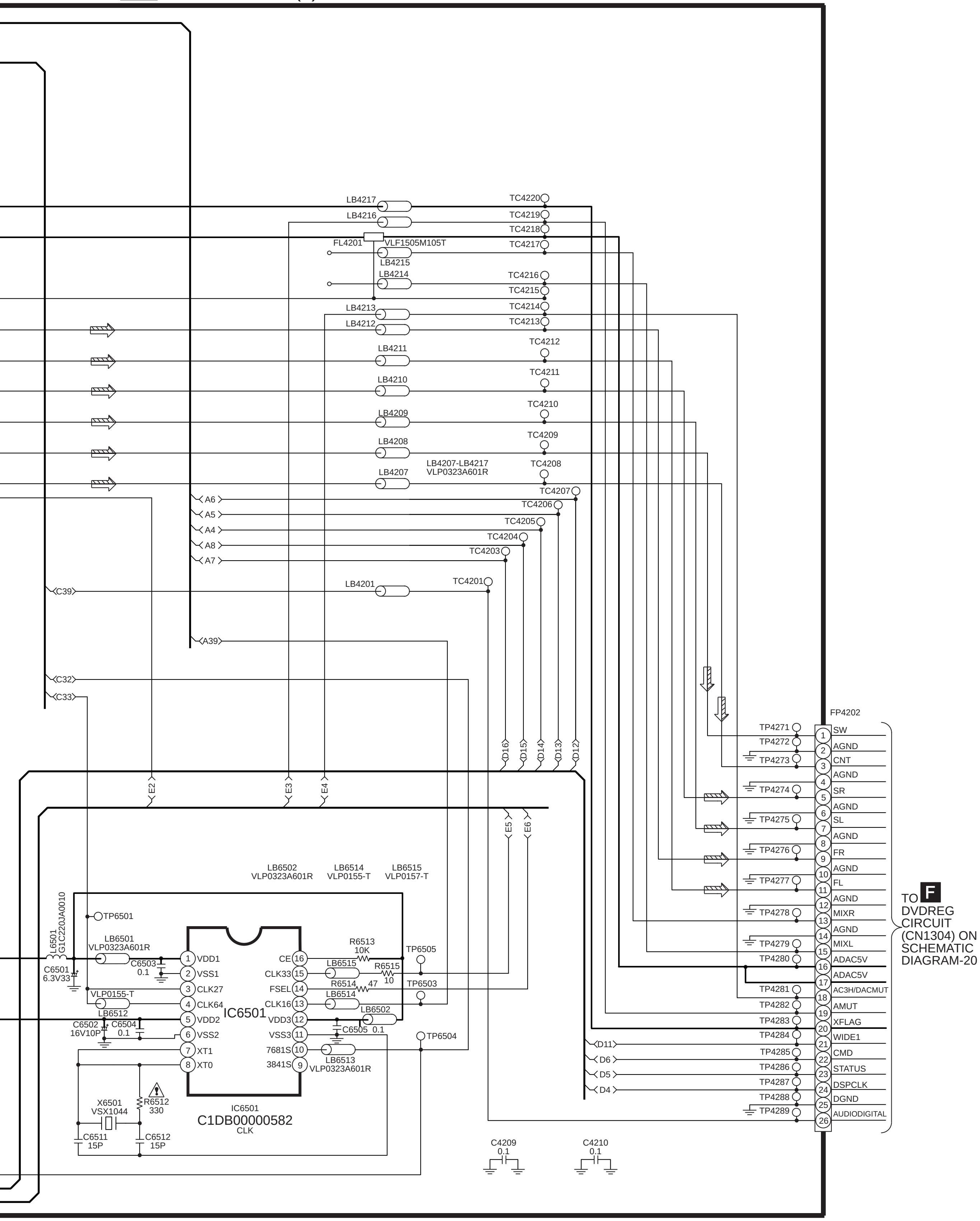
: CD/DVD (AUDIO) SIGNAL LINE

: MAIN SIGNAL LINE



B DVD MODULE(2) CIRCUIT

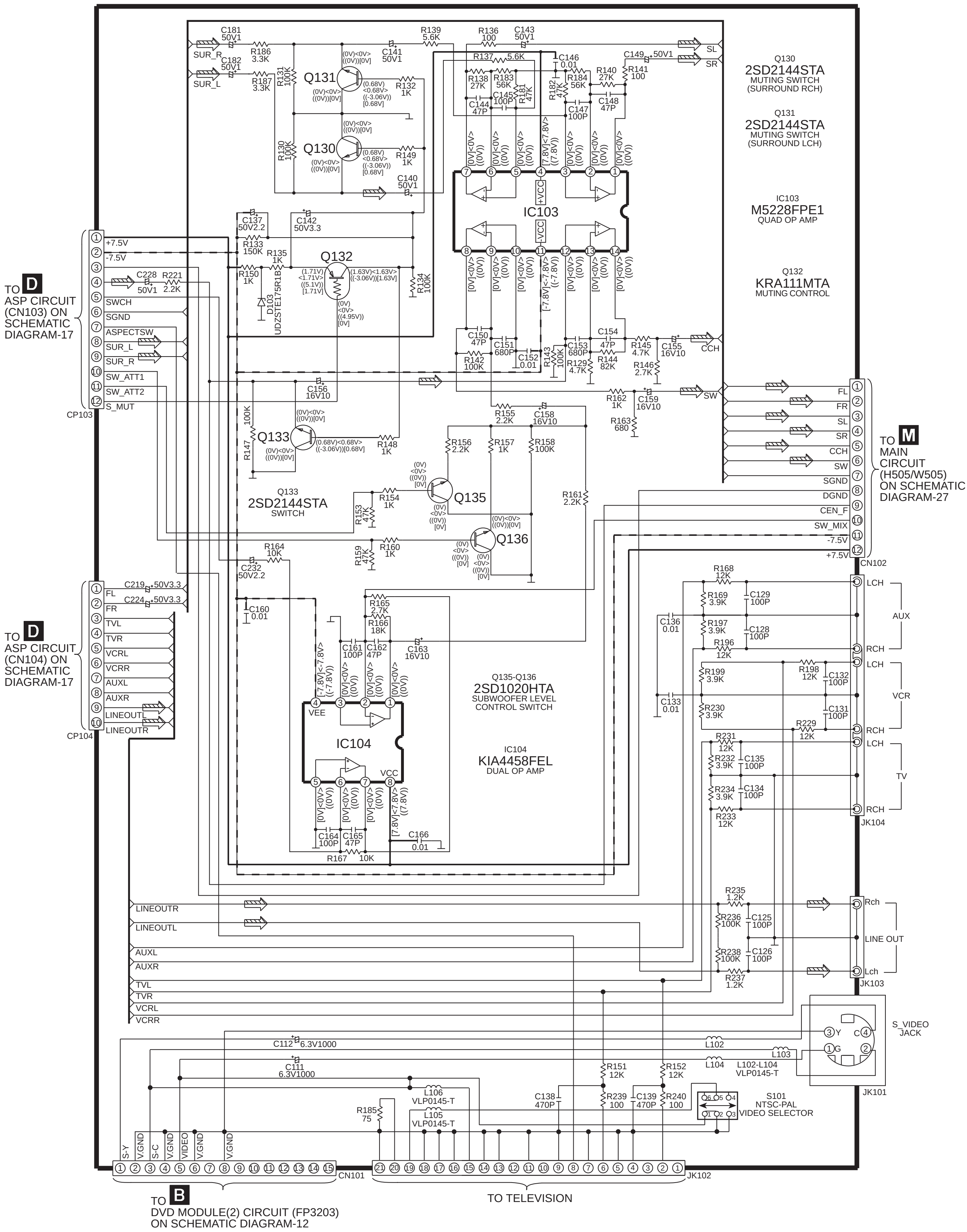
——— : +B SIGNAL LINE   ⇨ : MAIN SIGNAL LINE



SCHEMATIC DIAGRAM - 16

C INPUT CIRCUIT

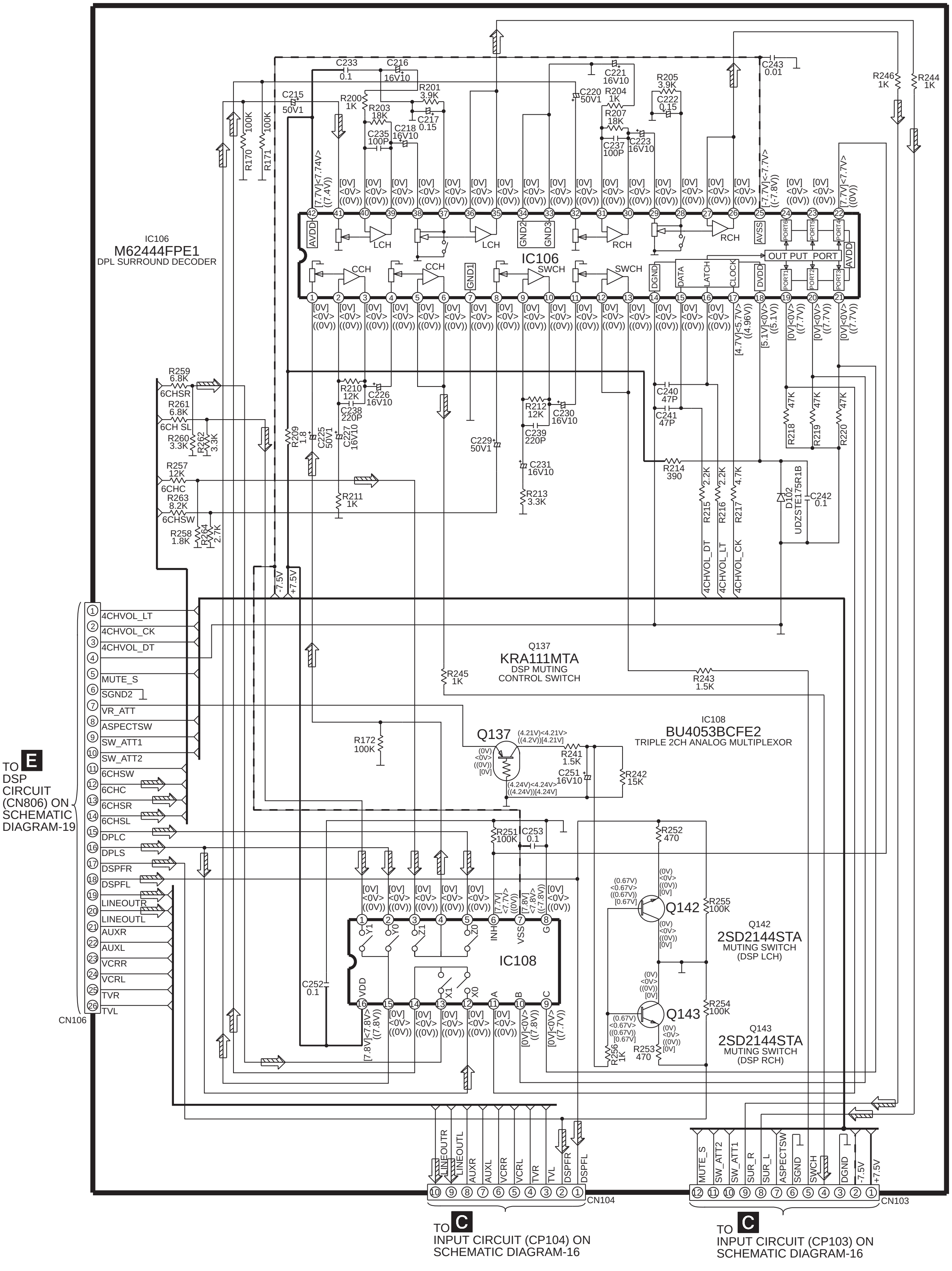
—— : +B SIGNAL LINE   - - : -B SIGNAL LINE   ⇨ : MAIN SIGNAL LINE



SCHEMATIC DIAGRAM - 17

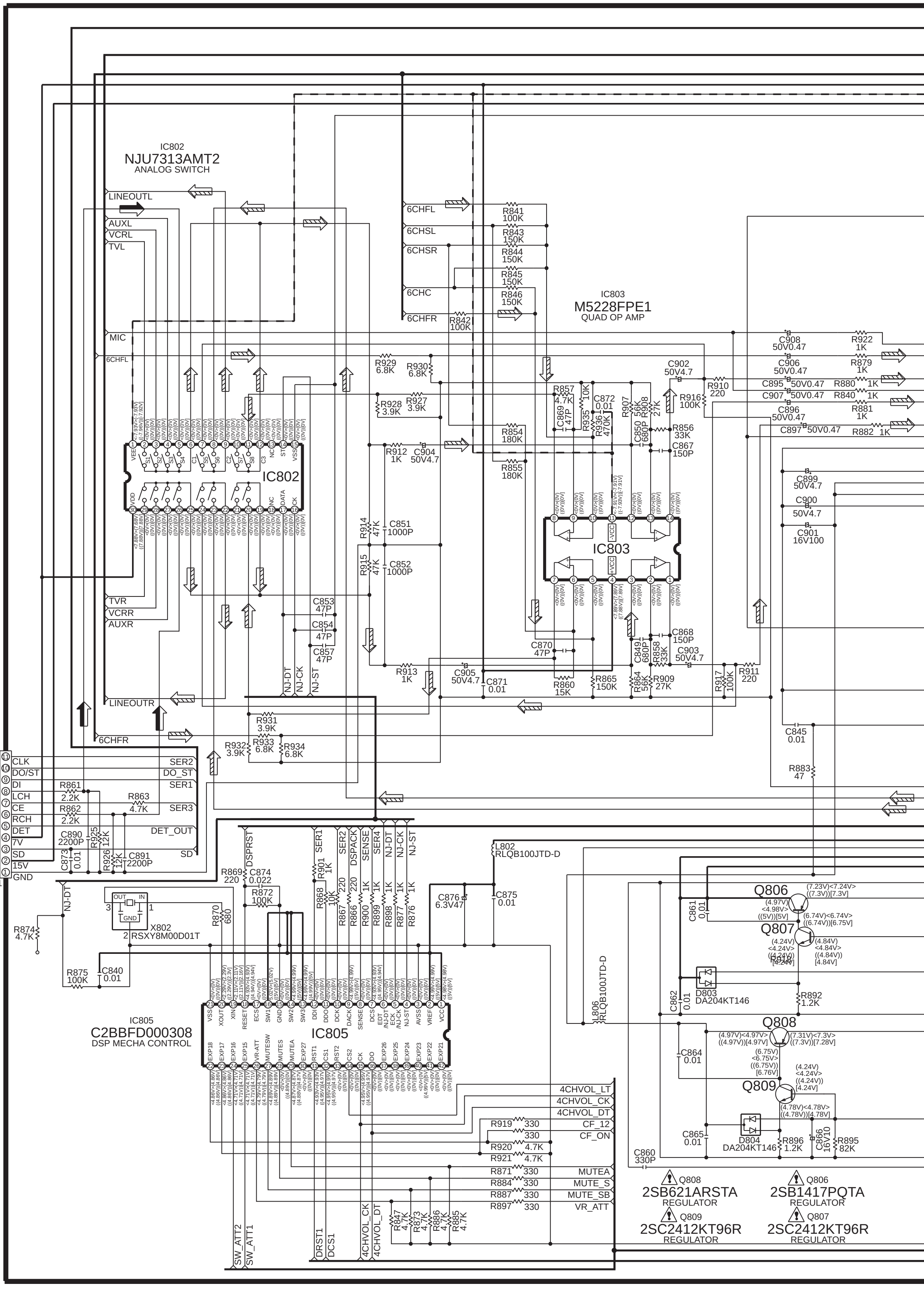
D ASP CIRCUIT

: +B SIGNAL LINE — : -B SIGNAL LINE — : MAIN SIGNAL LINE

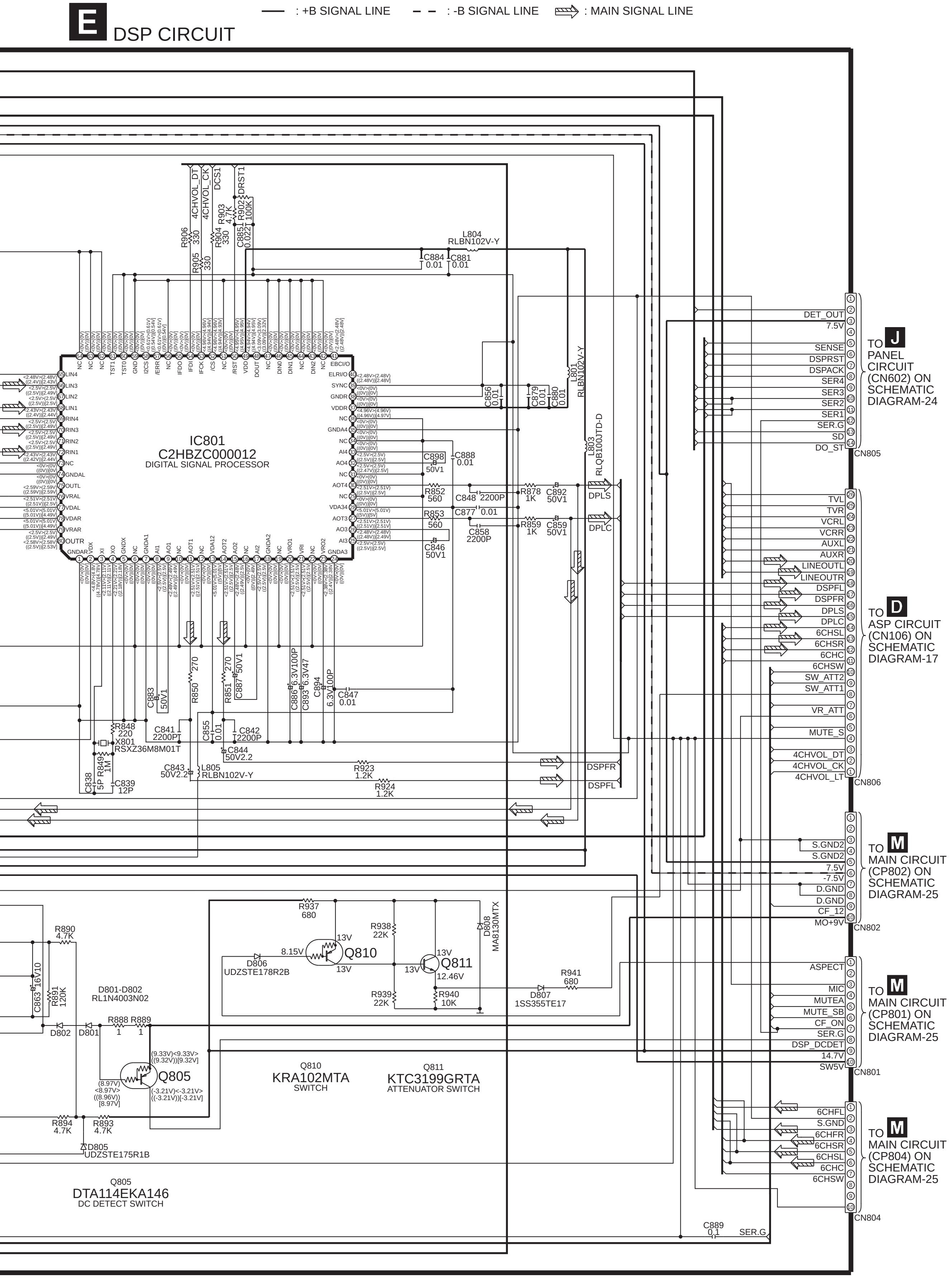


E DSP CIRCUIT

—— : +B SIGNAL LINE - - - : -B SIGNAL LINE ⇨ : FM/AM SIGNAL LINE

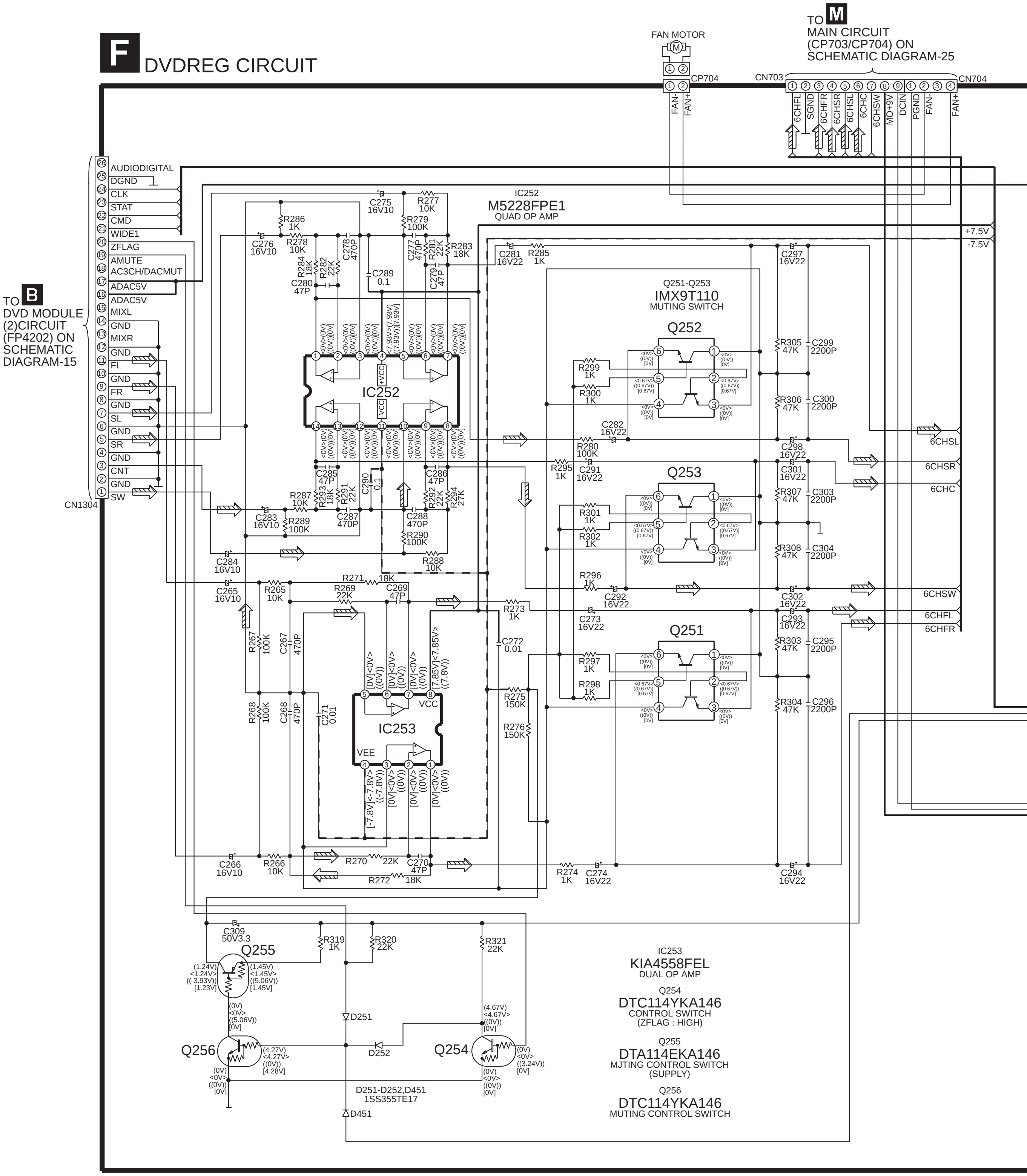


E DSP CIRCUIT

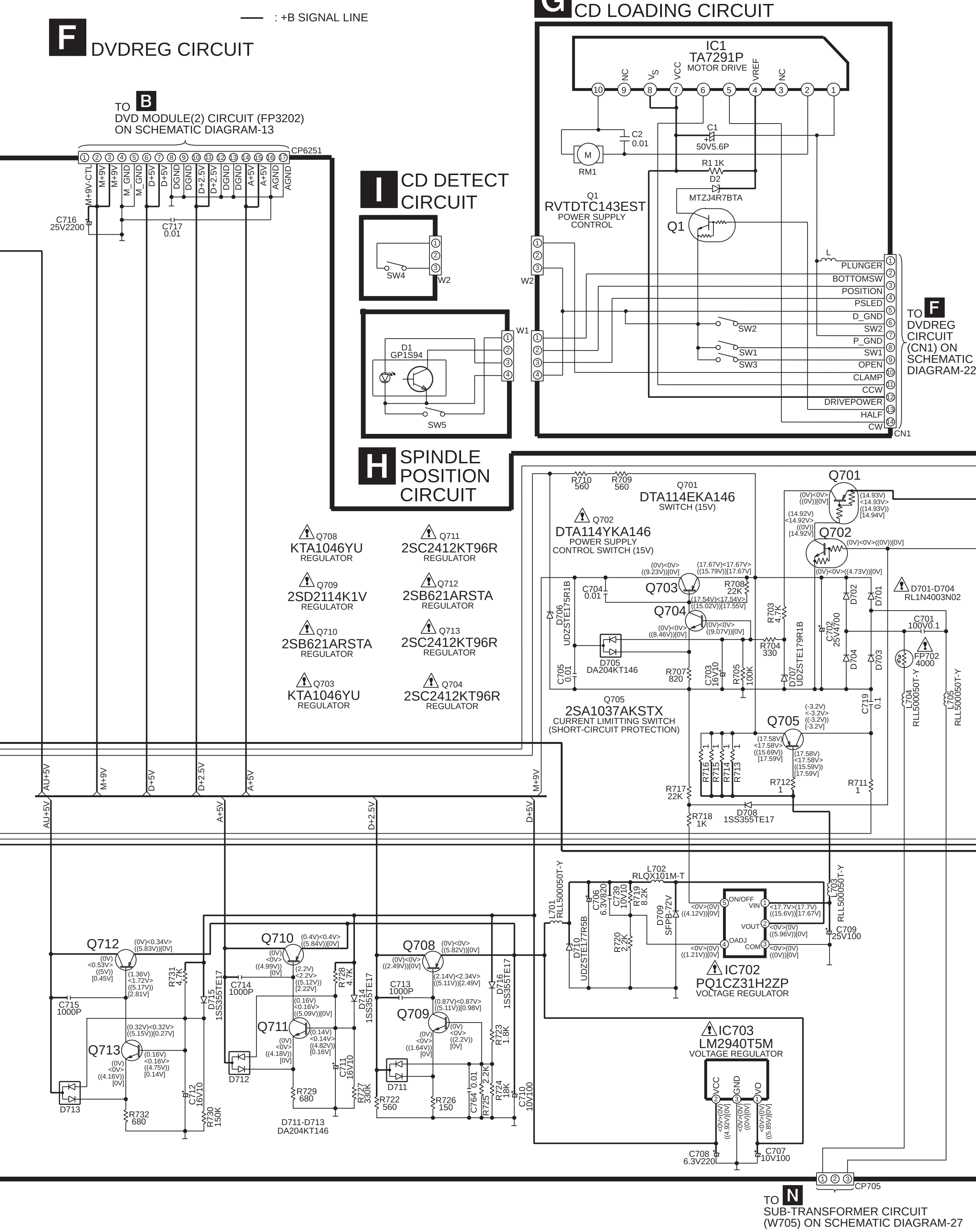


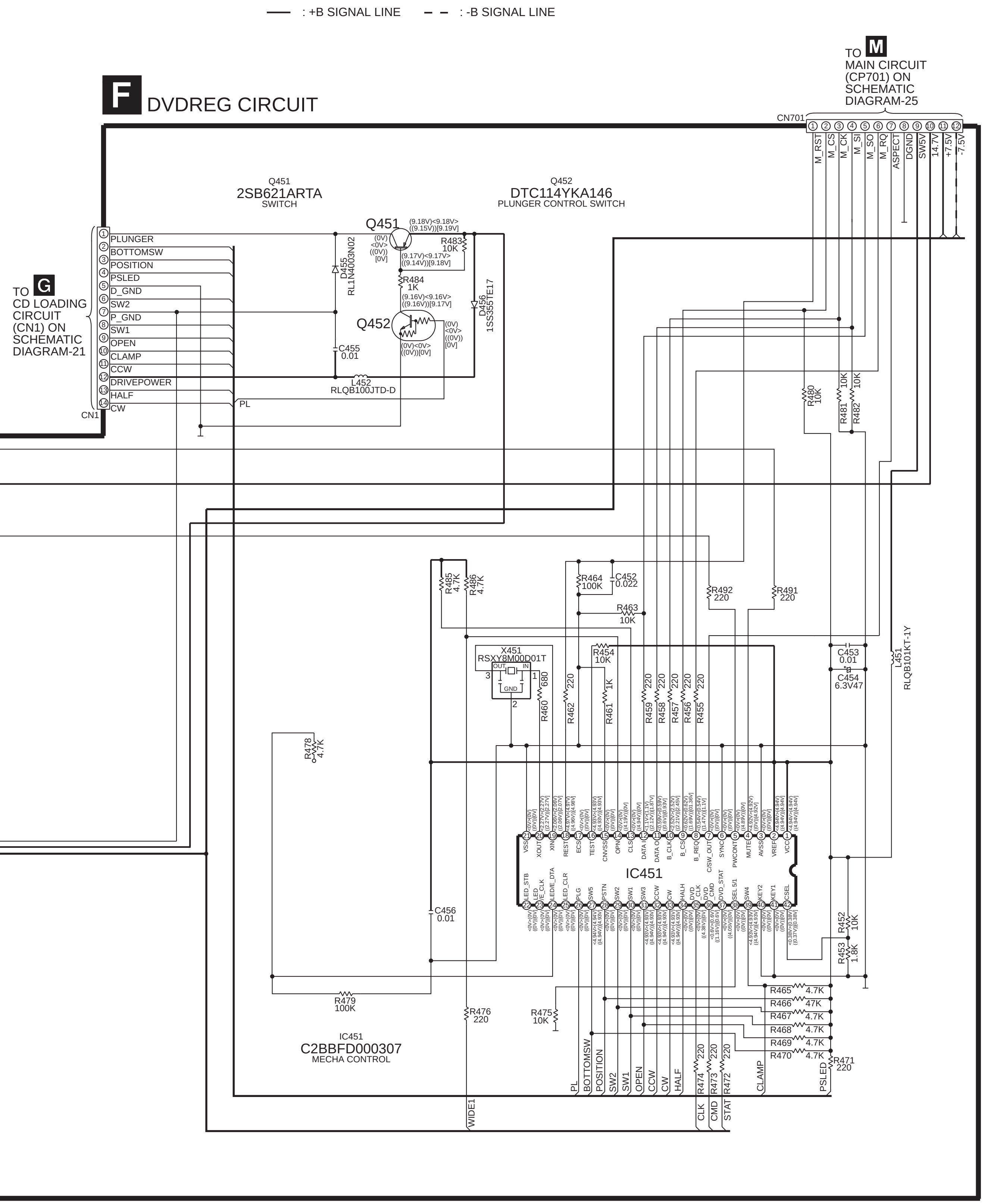
SCHEMATIC DIAGRAM - 20

—— : +B SIGNAL LINE – – : -B SIGNAL LINE



SCHEMATIC DIAGRAM - 21

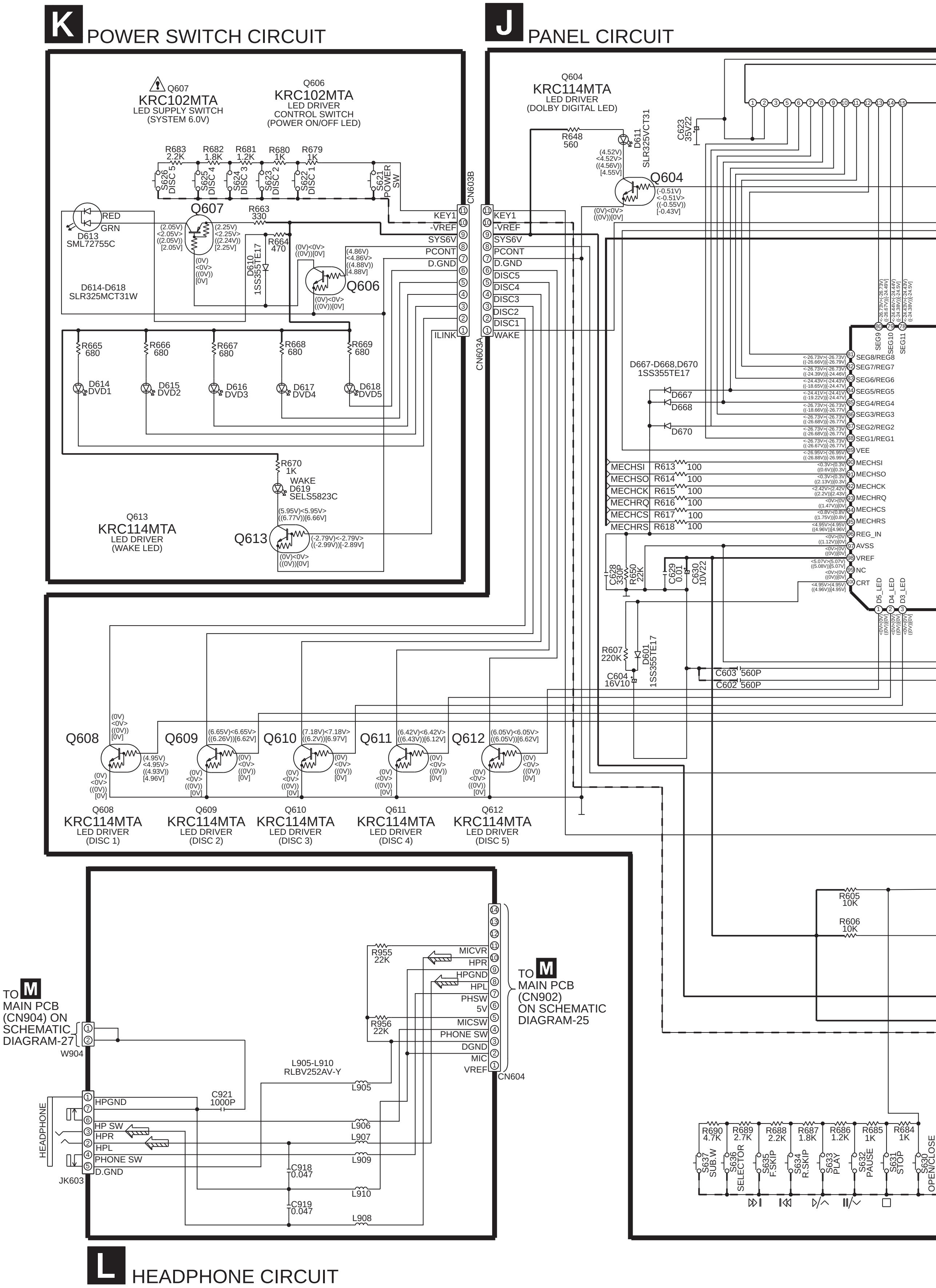




: +B SIGNAL LINE
: -B SIGNAL LINE
F DVDREG CIRCUIT
TO M MAIN CIRCUIT (CP701) ON SCHEMATIC DIAGRAM-25
CN701
M_RST
M_CS
M_CK
M_SI
M_SO
M_RQ
ASPECT
DGND
SW5V
14.7V
+7.5V
-7.5V
Q451 2SB621ARTA SWITCH
Q452 DTC114YKA146 PLUNGER CONTROL SWITCH
TO G CD LOADING CIRCUIT (CN1) ON SCHEMATIC DIAGRAM-21
PLUNGER
BOTTOMSW
POSITION
PSLED
D_GND
SW2
P_GND
SW1
OPEN
CLAMP
CCW
DRIVEPOWER
HALF
CW
CN1
PL
D455 RL1N4003N02
D456 1SS355TE17
R483 10K
R484 1K
C455 0.01
L452 RLQB100JTD-D
R480 10K
R481 10K
R482 10K
R485 4.7K
R486 4.7K
R464 100K
C452 0.022
R463 10K
R492 220
R491 220
R454 10K
X451 RSXY8M00D01T
R460 680
R462 220
R461 1K
R459 220
R458 220
R457 220
R456 220
R455 220
C453 0.01
C454 6.3V47
L451 RLQB101KT-1Y
R478 4.7K
IC451
C456 0.01
R452 10K
R453 1.8K
R479 100K
R476 220
R475 10K
R465 4.7K
R466 47K
R467 4.7K
R468 4.7K
R469 4.7K
R470 4.7K
R471 220
R474 220
R473 220
R472 220
IC451 C2BBFD000307 MECHA CONTROL
BOTTOMSW
POSITION
SW2
SW1
OPEN
CCW
CW
HALF
CLAMP
PSLED
WIDE1
CLK
CMD
STAT

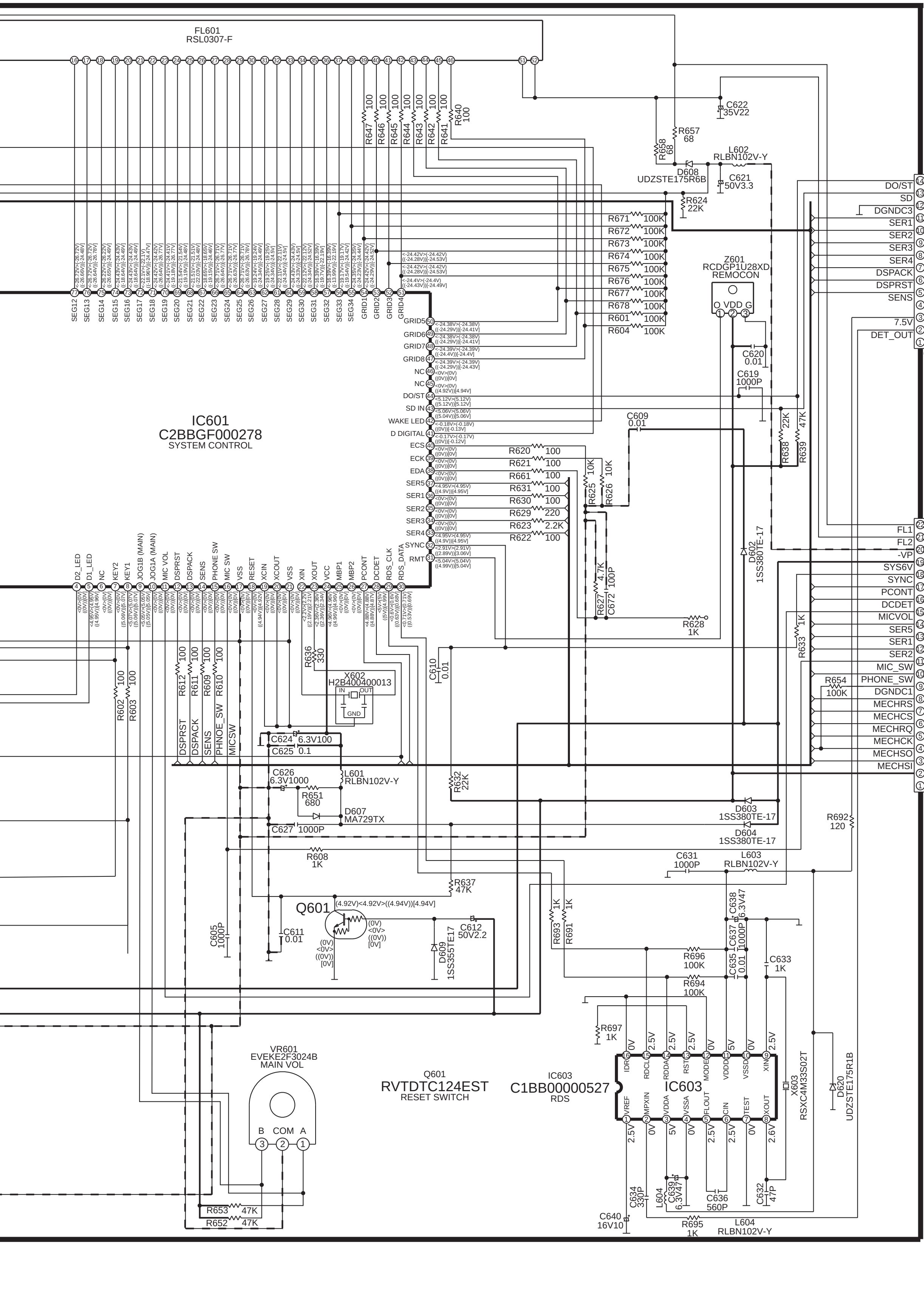
SCHEMATIC DIAGRAM - 23

—— : +B SIGNAL LINE   – – : -B SIGNAL LINE   ⇨ : MAIN SIGNAL LINE



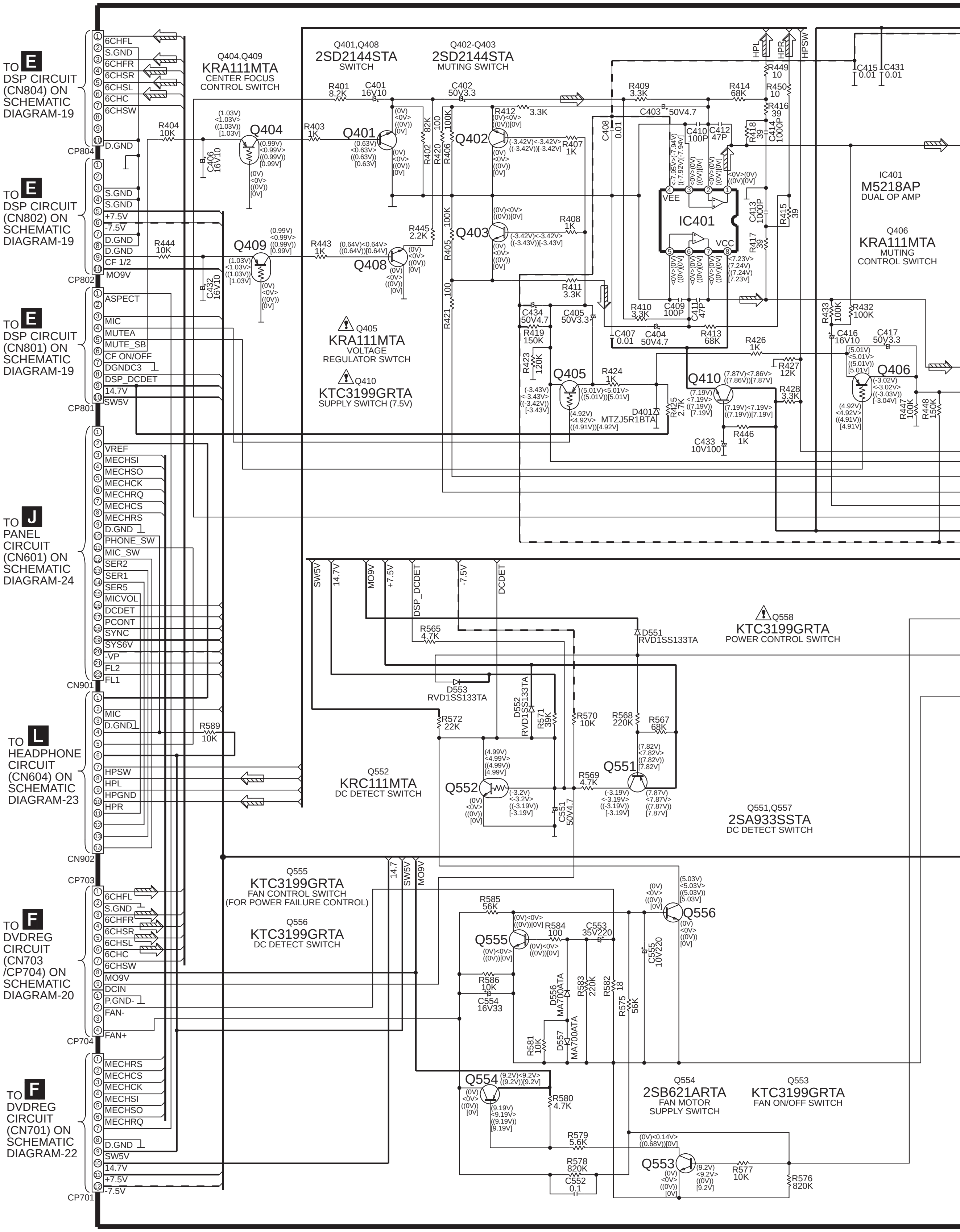
—— : +B SIGNAL LINE   - - : -B SIGNAL LINE

J PANEL CIRCUIT



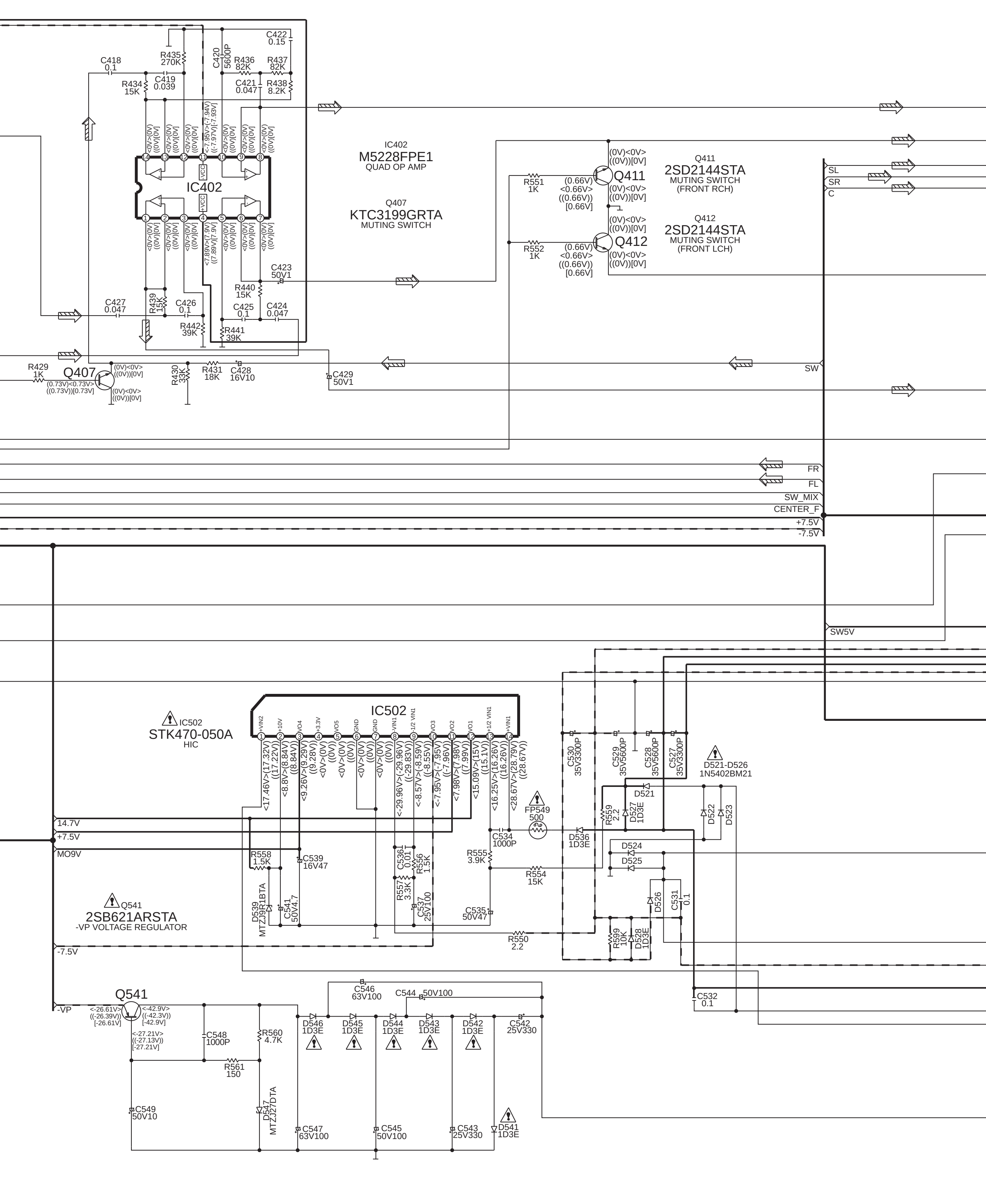
—— : +B SIGNAL LINE   - - : -B SIGNAL LINE

M MAIN CIRCUIT



— : +B SIGNAL LINE — — : -B SIGNAL LINE ⇨ : MAIN SIGNAL LINE

M MAIN CIRCUIT



—— : +B SIGNAL LINE　　– – : -B SIGNAL LINE　　⇒ : MAIN SIGNAL LINE

